

MARINE REVIEW.

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No. 16.

Free Use of Engineering Information in the Navy.

"Where is there another nation on earth that is as free as our own to give up information for the general advancement of engineering knowledge," said Mr. Walter Miller of Cleveland after his return from Washington a few days ago. He had called upon Chief Melville, Passed Assistant Engineer Bailey and other officials of the naval engineer corps, who are specially noted for their courtesy. After leaving the Globe Iron Works Co. some time ago, Mr. Miller visited British ship yards and a few on the continent. Since returning home, he made a trip to Florida, and on his way up from the south he stopped at the big works of the Newport News Ship Building & Dry Dock Co. He says that place is now the busiest in this country, while there was, a short time ago, not a ship on the stocks at the Cramp yard, Philadelphia. Big naval orders are about to be given, however, and it is quite probable that the Cramps will get a share of them. They have also an order or two since Mr. Miller's visit to Philadelphia. Orders under way in the Newport News plant, where Mr. Miller was specially impressed, include the two big battle-ships and four gunboats for the government, together with two small side-wheel steamers and a seagoing tug, as well as a big passenger steamer, for the Plant system. The Plant steamer is quite similar to the Northern Steamship Co's lake steamers North West and North Land. Her quadruple engines are of about the same size, and she will have Babcock & Wilcox water tube boilers. At the Newport News yard the big engine plant, which is one the largest of its kind in the country, sometimes has every tool engaged for weeks on repair work. The location of this works at Hampton Roads is in many respects greatly to its advantage, and Mr. Miller thinks it is to be in the future, more than in the past, the greatest works of its kind on the coast. But he refers to his visit with the naval engineers in Washington as most pleasing. They have drawings, he says, from all parts of the world on the best up-to-date practice in marine engineering. They do not say how they obtained these drawings, or the vast amount of data that accompanies them, but they are free to the examination of engineers who in any way help the department.

Since his return home, Mr. Miller has taken up an office in the Western Reserve building and will carry on a general consulting engineering business, but will give special attention to marine work for vessel owners and others who may require his services. It is quite probable also that he will, through Mr. H. F. J. Porter of Chicago, represent in this section the Bethlehem Iron Co. of South Bethlehem, Pa.,

Higher Grain Insurance Rates.

Low-grade vessels of the lake fleet are compelled to face disadvantages in all matters of insurance this season. In adopting insurance rates on grain, the Chicago underwriters announce a new system of classification. All grain-carrying boats are divided into three classes. The first class includes steamers of A1 and A1½ rating, and line steamers not below A2 rating, with average waived to Dec. 10. The second class includes all A1 and A1½ sail and towing vessels, with average waived to Dec. 1. The third class will include A2 vessels, steam, sail and tow.

On the first class a flat season rate of 30 cents per \$100 is made to Buffalo, 25 cents to Port Huron and 40 cents to Lake Ontario ports and Ogdensburg. On the second class a flat season rate of 45 cents is made to Lake Erie ports, 40 cents to Port Huron and 55 cents to Lake Ontario ports and Ogdensburg. On the third class the following sliding scale is made: To Lake Erie ports—To September, 50 cents; September, 70 cents; October, \$1.00; November, \$1.50. To Port Huron and Sarnia—To September, 45 cents; September, 65 cents; October, 95 cents; November, \$1.40. To Ogdensburg and Lake Ontario ports—To September, 60 cents; September, 90 cents; October, \$1.25; November, \$1.80. To Montreal the rates are 10 cents higher all around on all classes.

By this new classification the standard rate is 30 cents, and vessels of low grade will be compelled to make up to shippers all insurance paid on their cargoes in excess of the standard rate. The effect can but be to drive out of the grain trade all A2 boats after Oct. 1. The charging of higher rates on tow barges than on steamers towing them is a new departure. It means that owners of tow barges will be compelled to pay one-third of the insurance of their grain cargoes. The new rate is 5 cents higher on A1 boats than last season.

With the aid of one of the steam towing machines manufactured by the American Ship Windlass Co., the standard Oil Co., will again try shortly the experiment of towing an oil tank barge across the Atlantic.

Lake Freight Matters.

Notwithstanding the delay in ore sales, and the fact that the season of navigation is now open in the real sense of the term, it can not be learned that there has been any dollar ore taken by vessel owners, excepting 350,000 tons covered by M. A. Hanna & Co. of Cleveland, some time ago. Of this amount Capt. James Davidson of Bay City has 100,000 tons, the Drake-Kelderhouse boats of Buffalo 50,000 tons, and David Wallace and others of Lorain 50,000 tons. The balance of 150,000 was placed last fall, when James Davidson and the Buffalo parties made their contract, but all that can be learned about it is the statement that the transaction was with Cleveland owners. Otherwise the situation today is just as it has been for several weeks past, and vessel owners reassert their determination to hold out for \$1.10. Ore has been selling in small lots at the prices fixed by the association of ore dealers. The big steel companies have not as yet come into the market, although it is expected every day that they will do so.

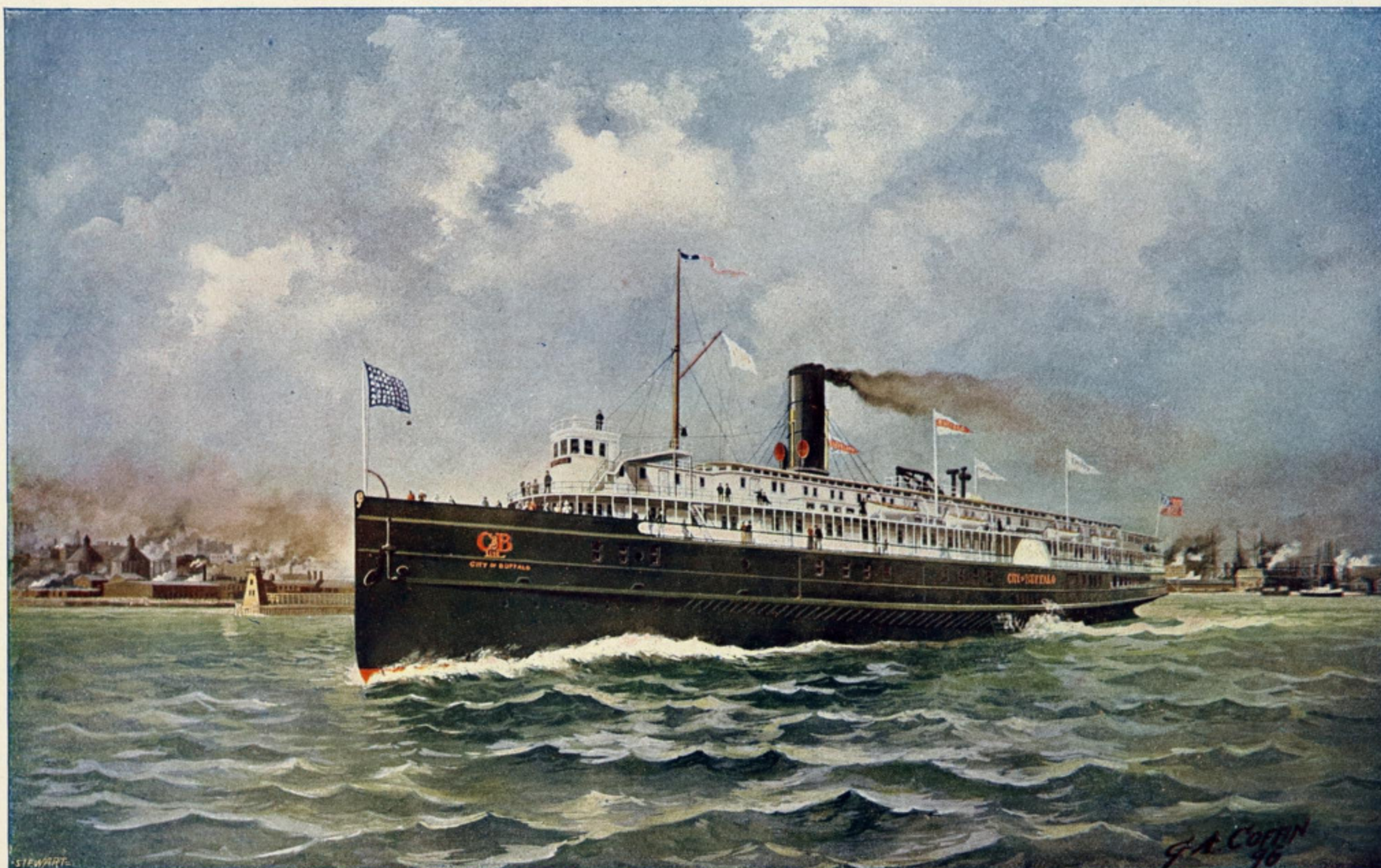
The engagement during the past few days of quite a number of vessels—capacity for about 15,000 tons—to make first trips with ore from Escanaba at 55 cents is an indication of the weakness that seems quite certain to prevail throughout the season in down freights from Lake Michigan. Freights out of Chicago and Escanaba will, of course, be supported by the heavy business that is certain to prevail on Lake Superior, but Lake Michigan will nevertheless be the objective point for low freights. It is now quite certain that the grain movement out of Chicago, even as regards corn, will not be very heavy at any time during the season, and one feature of the situation that would seem quite important on this account is the problem that coal dealers have on hand regarding the shipments to Milwaukee and other Lake Michigan points. Such of them as cannot make arrangements with vessels for ore on return trips, may have some high freights to pay.

Lumber dealers at the head of Lake Superior have a big business to offer, but as yet they refuse to pay more than \$1.75 to Buffalo, in quantities of about ten millions.

Officials of the Pittsburg, Shenango & Lake Erie Ry. Co., which controls the ore and coal railway that has made the port of Conneaut, are quoted as saying that they have a contract with the Carnegie Steel Co. providing for 2,000,000 tons of freight annually for twenty years, and that on the strength of this contract the Shenango railway is to be extended from Butler, Pa., to Pittsburg and connected with the Union Terminal road, so as to give access to Pittsburg furnaces generally. Funds to the extent of \$5,000,000 are said to have been secured for the purpose of building the extension and generally improving the Shenango road, as well as the terminals at Conneaut. If these statements are true, it would seem that the Carnegie company will soon have unlimited facilities for its ore at Lake Erie ports, as the big corporation only recently secured control of the E. & P. dock at Erie, which is to be operated by M. A. Hanna & Co., and on which twelve new Brown ore hoists are being erected. Then there is the Carnegie dock at Erie and the extensive interests of the company in the Minnesota dock at Ashtabula.

The Lake Carriers' Association has gone ahead with the work of lighting the new deep channels at Grosse point and Ballard's reef. Expenditures involved in this work will again add to the cost of private lights, so that the total for the present year will be about \$5,000. This private light expense has always been a source of annoyance in the association but it seems impossible to get rid of it, on account of the constant changes and improvements that are being made in the river channels. The government light-house authorities have begun preparations for lighting the Grosse point cut, but it will certainly be well into the summer before their plans are carried out, and in fact the entire season may pass before the slow and certain methods of this service will permit of permanent lights being established. In the meantime there is a big advantage in using the new deep channels by night at the two points named, and, of course, the association must undertake the expense.

G. G. Hadley, coal dealer and vessel owner of Toledo, says there will not be more than 50,000 tons of coal at the head of Lake Superior when navigation opens. This means that it will be necessary to ship to all Lake Superior points during the coming season about 500,000 tons more coal than was shipped during 1895 in order to have new supplies equal the total of coal consumed during the year ending with the close of the present month.



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CITY OF BUFFALO LEAVING CLEVELAND HARBOR.
(BUILT BY DETROIT DRY DOCK CO.)

Gas Buoys in Pelee Passage.

It is now more than probable that dangerous shoals in the vicinity of Point au Pelee, Lake Erie, will within a few weeks be marked as indicated on the accompanying chart—by a gas buoy $4\frac{1}{2}$ miles S. E. $\frac{1}{2}$ S. from Pelee point and another gas buoy on Pelee middle ground, as well as a nun buoy on Grecian shoal off Little's point. Some time ago, officials of the Canadian marine department agreed to establish these aids to navigation, if the Lake Carriers' Association would provide a supply of gas for the buoys. On Monday last Capt. Geo. P. McKay, treasurer of the Lake Carriers' Association, wrote Col. Anderson of the Canadian marine department informing him that the association would agree to supply gas for the buoys. It is understood that the association now has the consent, unofficially, of the United States light-house board to have a light-house tender supply the buoys with gas. Official announcement to this effect can not be made, as the buoys are to be owned by Canada and are to be in Canadian waters, but they will be of great assistance to vessels of the United States, and these aids to navigation are to be maintained by the light-house board on this account. All that remains now is for the Canadian officials to

four miles, and the shoal lies in a line from the 'Dummy' light to Pelee island light-house."

Mr. McCormick is mistaken in thinking that any master of a large deep-draft ship would now follow the old course to which he refers. The stretch of deep water between the middle ground and the island is limited, to begin with, and only a short time ago the steamer Michigan, while engaged on a survey in this vicinity, found in this channel several spots with only 17 and 18 feet of water over them, which are not marked on the old charts of this locality. If Mr. McCormick, or any vessel master, will write to Commander Sigsbee, chief of the hydrographic service, Washington, D. C., he can obtain a small chart showing results of the Michigan's survey.

Ore Handling Charges.

The increase of one cent a ton in the charge that is made by dock companies for unloading ore at Lake Erie ports will undoubtedly go to labor. This will mean an advance of one-half cent a ton for the ore shovelers, and the other half cent will go to machine operators and other

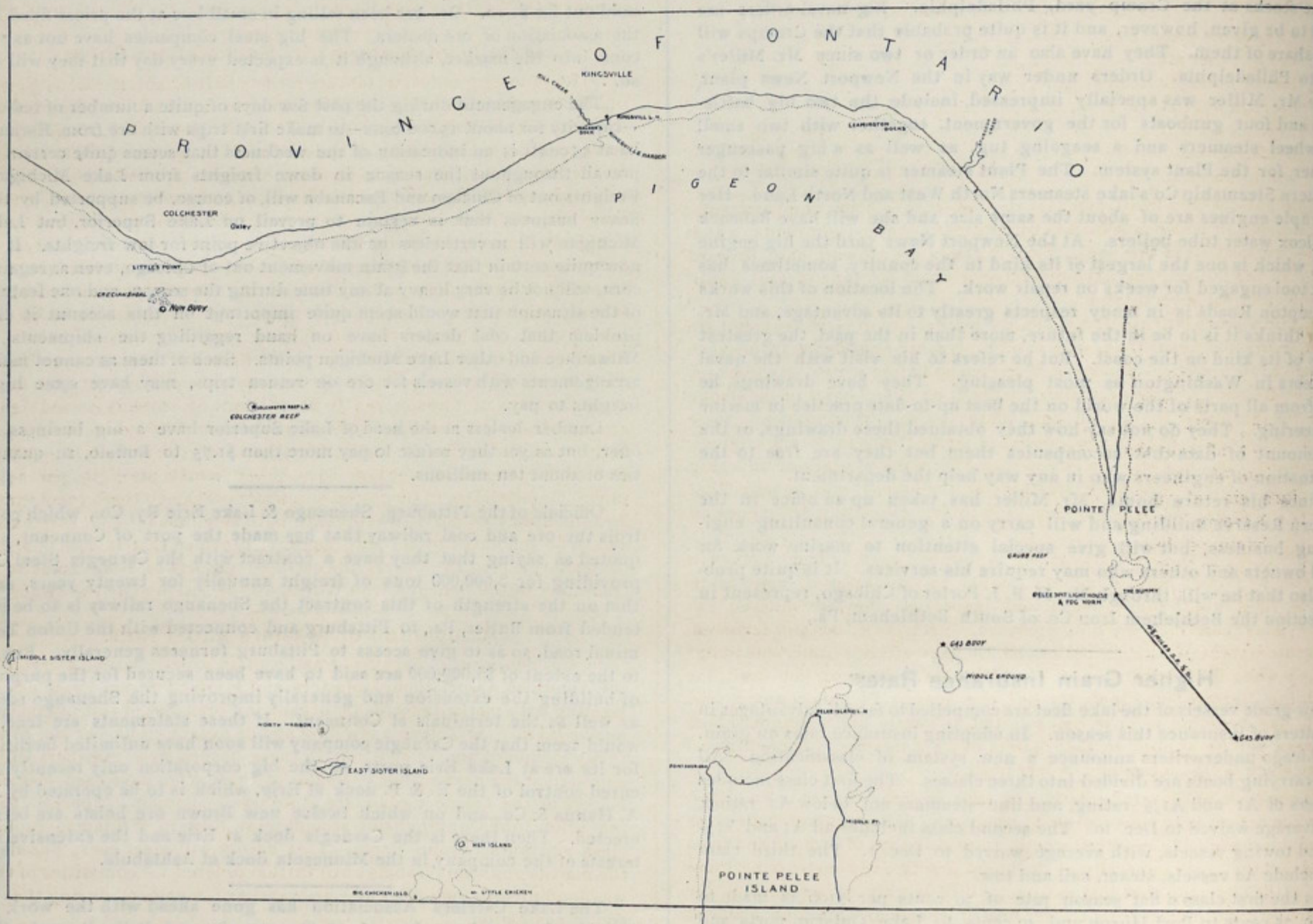


CHART SHOWING PROPOSED LOCATION OF GAS BUOYS IN POINT AU PEELE PASSAGE, LAKE ERIE.

purchase the buoys and place them in the positions noted on the chart. The buoys will be of the Pintsch type and will undoubtedly be purchased from the agent of the Pintsch Lighting Co., London. The Pintsch patents in Canada are controlled by the London company, while in the United States they are controlled by the Safety Car Heating & Lighting Co. of New York.

In a recent issue of the REVIEW there was published a communication from F. B. McCormick, collector of customs at South Port, Pelee Island, regarding the new shoals found south-east of the "Dummy" light. Mr. McCormick said:

"These shoals can be largely if not entirely avoided by taking the old course and going west and south of the middle ground. I say the 'old course' for old sailors will remember that thirty and forty years ago almost all vessels stood in close to Pelee island light, west of the middle ground, and only of late years has this new fashion of a more easterly and northerly course in standing through the north passage been adopted. The chart shows good water clear through the channel on this old course, and the only thing required is to keep Pelee island light well aboard at a distance of say $1\frac{1}{2}$ to 2 miles. From Pelee island light to the middle ground is just

workmen on the ore docks. By this action the promise of the dock companies to restore wages to rates prevailing previous to the depression in the ore business will be fulfilled, and it is not probable that there will be any trouble at Lake Erie ore docks. The rate of 16 cents for unloading ore, now established at all Lake Erie docks, does not meet with objection from vessel owners, especially as it has been established in advance of contract freight rates being generally fixed.

The matter of ore trimming charges at upper lake shipping ports was discussed at a meeting of the executive committee of the Lake Carriers' Association in Cleveland, Monday. No action was taken, but it was agreed that it would be difficult to establish a uniform rate at all of the shipping ports. For the present the matter is left just as it was a year ago. Vessel owners will object to any marked advance in trimming charges, but they will probably pay something of an advance rather than undertake partial trimming with crews, or going without trimming altogether.

A few vessels of the Chicago grain fleet are loaded as deep as 16 feet.

City of Buffalo—Finest Side-Wheel Steamer on the Lake.

In an elegant colored supplement accompanying this issue of the REVIEW there is presented a very good picture of the new Cleveland & Buffalo line steamer City of Buffalo, which will, about two weeks hence, leave the works of the Detroit Dry Dock Co., fully equipped for service between Cleveland and Buffalo. This supplement is produced by what is known as the photo-chromotype or three-color printing process. The REVIEW was one of the first publications in the country to give attention to this process of color printing, and the success attained with pictures of ships has been far in advance of anything of the kind accomplished in other lines.

This new Cleveland and Buffalo line boat merits a full description, as she will be by great odds the finest side-wheel steamer on the lakes. Her cost complete will be full \$350,000, and her owners confidently expect that she will attain a speed of twenty miles an hour in regular service.

The City of Buffalo was designed by Frank E. Kirby of the Detroit Dry Dock Co., who designed and built the City of Cleveland, City of Detroit and other big side-wheel steamers of the Detroit & Cleveland Steam Navigation Co. In general outward appearance the City of Buffalo will resemble the big side-wheel steamers of the D. & C. Co., but her single stack will give her a more trim appearance, and she will be not only larger but a far more powerful ship. Her principal dimensions are:

Length on water line.....	298 ft.
Length over all.....	308 "
Breadth over hull (m s).....	41 "
Breadth over all (m s).....	75 "
Depth, midship.....	17 " 4 in.
Draft, light.....	9 " 6 "
Draft, loaded.....	11 " 6 "

The hull, which is of steel, is divided into eleven compartments, communication between which is by automatic water-tight doors, which can be operated from the deck. Coal bunkers are athwart ship, forward and aft of the boilers, and have capacity for about 350 tons of coal, a supply sufficient for several trips.

Engines were built by the W. & A. Fletcher Co. of New York and are of the compound beam type, with a high pressure cylinder 52 inches by 8 feet and a low pressure cylinder of 80 inches by 12 feet stroke. Engines are fitted with Sickie's valve gear, which will cut off at any point of the stroke while the engine is in motion, and there is also a pressure feed water heater of sufficient capacity to condense steam from all of the engines, some sixteen in number. In comparing the main engines of this ship with those of other side-wheel steamers on the lakes it may be noted that no other steamer of her type has a cylinder exceeding 68 inches in diameter.

Boilers are of the Scotch type, six in number, each 12 feet 6 inches in diameter by 12 feet length, and the quality and thickness of material in them is such that under government inspection they are allowed 125 pounds per square inch working pressure. Each boiler has two furnaces. The gross weight of the six boilers is 250 tons without water and about 500 tons when filled with water. The Howden system of hot draft, for which the Detroit Dry Dock Co. has the agency in this country, and which has been or is now being fitted to nearly half a hundred lake steamers, will be applied to the boilers of this steamer. The elliptical smoke stack is 7 by 9 feet and 65 feet high.

Wheels are of the Clyde feathering type, 30 feet 6 inches in diameter, and when set up complete weigh 58 tons each. All parts are made so as to be interchangeable in either wheel. Bushings are of bronze, and from the advantage taken generally of the latest practice in constructing these wheels it is expected that lost motion will be largely overcome, and the jar usually experienced from the motion of wheels of this kind reduced to a minimum. The main shafts are 29 feet long and 24 inches diameter, and weigh 18½ tons each. They were forged by the Cleveland City Forge & Iron Co.

An electric light plant capable of supplying 1,500 to 2,000 lamps, in addition to a search light, has been fitted by the Fontaine Crossing Co. of Detroit.

As in other passenger ships of this kind on the lakes the entire main deck forward of the passenger gangways, which are some distance aft of the wheel houses, will be given up to freight. In fact, the main object of adopting the side-wheel type of steamer for service of the kind in which the City of Buffalo will be engaged is to provide great floor space on the main deck for freight. Space of this kind in this steamer is thought to be sufficient for about 800 tons of general merchandise. The first apartment entered from the passenger gangways will in this boat be called the social hall. It is finished in light mahogany, highly carved, and the decorations are equal to those in the most elegant part of the ship. Adjoining this social hall are the purser's and steward's offices and the baggage room, and aft of it, in the extreme stern of the vessel, is a day cabin, from which entrance may be had to two small dining rooms, intended for the accommodation of private dining parties. The main dining room is below the main deck but it is elegantly furnished, and

with a spacious stairway leading from the social hall it is far more inviting than dining rooms thus situated on many other steamers. It is finished in oak and will seat about 150 people. Kitchen and pantry are also below the main deck forward of the dining room. Service will be on the European plan, aside from passage or state-room accommodation. The grand saloon, or the upper part of the ship, from which entrance is gained to all state-rooms, is 250 feet long and is surrounded by a gallery that leads to the second tier of state-rooms. This part of the steamer is, of course, most elaborately finished. The lower portion is in solid dark mahogany, with pressed leather panelings of artistic design, while parts surrounding and above the gallery will be of delicate tints with gold tracings. Furniture and upholstery are of designs harmonizing with the general surroundings. Accommodations for passengers traveling by night on this ship include 160 state rooms, besides six parlors with bath and other accommodations, and 150 single berths, making in all berths for 640 people.

A steam capstan windlass and dock steam capstan on this steamer were furnished by the American Ship Windlass Co. of Providence, R. I.; anchors by De Grauw, Aymar & Co., New York, through D. Osier of West Bay City, their lake representative; signal lights by Russell & Watson of Buffalo, and dining room linens as well as the entire outfitting of state-rooms by the Taylor-Woolfenden Co. of Detroit.

Quality of Material in Rockefellers Ships.

The following notes, which are made a part of specifications governing the construction of the two 400 foot steamers that are being built by the Globe Iron Works Co., Cleveland, for Mr. John D. Rockefeller, will serve to indicate the quality of material used in modern freight steamers on the lakes: "All plating to be of open hearth mild steel, tested to the following specifications: Tensile strength to be not less than 54,000 not more than 62,000 pounds per square inch. Limit of phosphorus not to exceed .08; elongation to be not less than 24 per cent. in 8 inches, and reduction to be not less than 45 per cent. Reports of tests are to be furnished with invoices, and plates are not to be run over or under theoretical weight more than 2½ per cent. All plates are to be of open hearth steel. All shapes that are furnace shaped are also to be of open hearth steel. All other shapes can be of Bessemer steel or open hearth steel as desired by the builder. Rivets are to be of the best open hearth steel, the limit of phosphorus to be .06, limit of sulphur .06 and tensile strength to be not less than 52,000 or more than 60,000 pounds per square inch; or, at the option of the builders, to be of the first-class quality of iron rivet material, of not less than 50,000 tensile strength per square inch. Materials are to be tested at makers' works to these requirements by a disinterested party to represent both steel maker and ship builder and to be appointed by the ship builder; provided that in case of angles, channels, beams and Z bars, the certified reports of tests made at the laboratory of the Pencoyd Iron Works will be accepted by the owner."

Association of Masters and Pilots.

Capt. Benjamin F. Perkins, grand captain's clerk, (grand secretary) of the American Association of Masters and Pilots of Steam Vessels is still meeting with marked success in organizing branches of this organization on the lakes. At Toledo a few days ago he organized harbor No. 43 with thirty members, and in addition to these several new members will be admitted at the next voyage. Names of those who have been elected as officers of the Toledo harbor are as follows: Captain, Albert S. Fitts; first pilot, John Cunningham; second pilot, Edward Williams; captain's clerk and purser, John Nagle. This harbor will meet every Tuesday in the marine engineers' rooms until further ordered. A committee of three was appointed to look after any grievances of members during the season of navigation.

Capt. John A. Donahue, who died of typhoid fever at his home on Twenty-third avenue, Cleveland, Monday, had been in the Bradley employ for a number of years. He was with Capt. J. A. Holmes, president of the Cleveland lodge, Ship Masters' Association, in vessels of the Bradley fleet before he was given command of the steamer Superior in 1894. During the greater part of last year he sailed the steamer Ranney. Capt. Donahue was only twenty-eight years old and had a bright future, as his friends on the lakes were numerous. Capt. Holmes was especially interested in his welfare.

The Detroit and Cleveland Steam Navigation Co's steamers are now running daily (except Sunday) between Detroit and Cleveland. When traveling east or west, north or south, try to arrange to take advantage of these luxurious steamers between Michigan and Ohio. If you are contemplating a summer outing, write A. A. Schantz, general passenger agent, Detroit, for illustrated pamphlet, which gives full information of a trip to Mackinac via the coast line.

Telegrams from the Sault say it will not be safe for boats to load below 13 feet 6 inches on the first trip but it is expected the water will rise a little shortly after the opening.

Around the Lakes.

Capt. Wm. S. Mack, Cleveland, will remove his office to 705 Perry-Payne building on May 1.

It is thought that the Crosby Transportation Co. paid the Grand Trunk Ry. Co. about \$50,000 for the iron steamer Wisconsin.

Officers of the traffic department of the Northern Steamship Co., Buffalo, have been moved from 60 Main street to the Birge building, Main and Seneca streets.

Another vessel has been chartered by the Northern Steamship Co. for the season. The steamer Centurion will carry package freight in that line between Duluth and Buffalo at \$1 a ton net.

Wages of employes aboard Buffalo line boats have been increased about 5 per cent, over those of the past two seasons. Line boat managers have a wage schedule separate from that of the Lake Carriers' Association.

The Cuddy-Mullen Coal Co. of Cleveland has secured a part of the Canadian Pacific Co's order for soft coal. The contract involves in all the delivery of about 200,000 tons of coal at Owen Sound and Fort William.

Headquarters of the Union Steamboat Co. have been removed to New York. The traffic management becomes a part of the Erie railway. Manager Bullard and six other employes will remain in Buffalo, but the force otherwise has been discharged.

Commander W. M. Folger, U. S. N., lately in command of the Yorktown, has been detailed to duty as inspector of the eleventh lighthouse district, Detroit, relieving Lieutenant Commander W. W. Meade, ordered to duty at the Norfolk navy yard as equipment officer.

Messrs. Bartlett and Tinker of Cleveland, who are now in charge of the Hanna docks and warehouses, which are among the best in the city, will represent the steamers Saginaw Valley, J. C. Ford and Geo. Farwell of the new Lake Superior Transportation Co., as well as Grummond's Mackinaw steamer. They are also expecting to have other package freight vessels later in the season.

Capt. Geo. A. Simpson, compass adjuster, made a test in Cleveland, Tuesday, of the megaphone, a sound instrument which he is introducing on the lakes. The test was witnessed by Mr. H. C. Coulby of Pickands, Mather & Co., Capt. Mallory and others, and as a result six of the instruments were ordered for the Minnesota fleet. The megaphone is a cheap speaking trumpet and sound receiver and will very probably prove valuable for communication between vessels, especially tows, and for picking up a fog horn or bell in thick weather. Full information regarding the instrument can be obtained by addressing Capt. Simpson, care the MARINE REVIEW.

Stocks of Grain at Lake Ports.

The following table, prepared from reports of the Chicago board of trade, shows the stocks of wheat and corn in store in regular elevators at the principal points of accumulation on the lakes on April 11, 1896:

	Wheat, bushels.	Corn, bushels.
Chicago.....	17,053,000	6,443,000
Duluth.....	14,352,000	144,000
Milwaukee.....	407,000
Detroit.....	247,000	13,000
Toledo.....	594,000	701,000
Buffalo.....	901,000	17,000
Total.....	23,554,000	7,318,000

As compared with a week ago, the above figures show at the several points named a decrease of 10,437,000 bushels of wheat and 327,000 bushels of corn.

On April 11, there was afloat at Chicago 1,411,000 bushels of wheat, 6,731,000 bushels of corn and 1,525,000 bushels of oats; at Duluth, 512,000 bushels of wheat, and at Milwaukee 176,000 bushels of wheat and 280,000 bushels of oats.

Aids to Navigation.

It is now quite certain that when the sundry civil appropriation bill passes the Senate it will contain an amendment providing \$20,000 for gas buoys on the lakes. Secretary Keep and other officers of the Lake Carrier's Association have been working with Senator McMillan to this end, and the great advantages of gas buoys in lake channels are recognized by officials of the light-house board, who are also anxious to secure this appropriation. The sundry civil bill as it passed the house contained the following appropriations for aids to navigation on the lakes:

Fog signal, St. Joseph harbor, \$5,000; light station, Carlton island, St. Lawrence river, \$6,000; fog signal, Galoo island, Lake Ontario, \$5,700; lights on Portage lake, Portage ship canal and Portage river, \$10,500; fog signal, Big Sable, Michigan, \$5,500.

There is assurance also of the construction, during the coming season, of the light and fog signal on North Manitou island, in which the Lake

Michigan and Lake Superior Transit Co. has been so much interested. The appropriation for this light was secured some time ago, but it could not be constructed on account of difficulties encountered in securing title to the land. By a special act, which was signed by the president Tuesday, the light-house board is now authorized to proceed with the construction of this light and fog signal.

Rules in Rhyme.

For nearly thirty years Capt. E. Day, now in charge of the ore and coal docks at Conneaut, but who was among the early lake navigators, has preserved a copy of an old style of blank tug bill, issued by owners of the "steam tug" American Eagle of Milwaukee, and on which was written the following lines:

Meeting steamers do not dread,
When you see three lights ahead
Port your helm and show your red.

For steamers passing you must try
To keep this maxim in your eye—
Green to green, or red to red,
Perfect safety, go ahead.

If to starboard red appear,
It is your duty to keep clear,
Act as judgment says is proper,
Port or starboard, back or stop her.

But when on your port is seen,
A steamer with a light of green,
There's not so much for you to do,
The green light must keep clear of you.

Both in safety and in doubt,
Always keep a good lookout,
Should there not be room to turn,
Stop your ship and back astern.

Rhymes of this kind are not so common as they were in times past, but this bit of poetry committed to memory might prove servicable at any time to young men aboard ships. The old tug bill on which the rhyme was written is embellished with several drawings of old lake vessels which were made by Capt. McMilledge, one of Capt. Day's old friends, while on a trip to Montreal in 1868, and it is cherished on this account.

In General.

The death is announced of M. Julien Belleville, one of the most eminent French inventors, after whom the Belleville boiler is named.

Clyde ship builders are experiencing a boom. Some of the largest firms have booked more orders than they can conveniently cope with.

Capt. Nicoll Ludlow, U. S. N., formerly in charge of light-house matters on Lake Michigan, is the senior member of a board appointed to test the new government dry dock at Port Orchard, Wash.

Pig iron statistics prepared on the first day of the month show that while production has remained stationary lately, stocks have accumulated, the additions to supplies during March being about 60,000 tons. On April 1 the weekly capacity of furnaces in blast was 190,261 gross ton, against 189,583 tons on March 1, 198,599 tons Feb. 1, and 207,481 tons on Jan. 1.

Everybody who has seen the distance table recently published by the hydrographic office is highly pleased with it. Ports to the number of 119 are alphabetically arranged at the bottom of a triangular table, in which the distance between any of them may be found. The chart sells at 50 cents in ordinary form and at \$1 when backed with linen and may be had from the MARINE REVIEW.

W. C. Sproul, editor of the Chester (Pa.) Times and son-in-law of John B. Roach, ship builder, and E. Lawrence Fell, president of the Franklin Printing Co., Philadelphia, paid the REVIEW a visit a few days ago. Alike to everybody else in Chester, the town which is so closely associated with the name of Roach and American ship building, Mr. Sproul is an enthusiast on everything pertaining to shipping. He says that John B. Roach looks upon the REVIEW as the best journal in this country devoted to shipping interests.

During the quarter ending March 31, the total number of vessels built and documented in the United States was 124, of 28,170 tons, as compared with 128 vessels of 29,336 tons for the previous quarter. Of the vessels built during the quarter sixty-five were sail and fifty-nine steam. The steel steamers built were nine, of 12,349 tons, of which two, of 7,004 tons, were built on the great lakes. Forty-eight wooden sailing vessels, of 9,089 tons, were built on the Atlantic and gulf coasts, and twenty-nine wooden steam vessels, of 3,312 tons, were built on western rivers. During the present quarter the output on the lakes will probably exceed all previous records, as the great number of new steel steamers begun last fall will now leave the ship yards rapidly.

Ship Yard Matters.

A correspondent sends the following notes regarding work in the ship and engine building plants at Detroit: Favorable weather has resulted in considerable progress with work at the Wyandotte ship yard of the Detroit Dry Dock Co., but as yet the first of the two Rockefeller steamers is not by any means entirely plated. The sister-ship is now assuming fair proportions, as the ballast tanks are about completed. Nearly 700 men are at work in the ship yard. Iron work is being finished on the steel lumber steamer that is building for C. R. Jones and others of Cleveland and she is about ready for launching. Engineers are at work on this steamer and also on the 400-footer for the Wolverine Steamship Co. All new tools in the shops at the ship yard are now in operation, the Kirby flanging machine having proven a most useful tool for flanging gusset plates, etc., and also for opening or closing angle bars or for the straightening of plate edges, bars, etc. At the Orleans street yard of the Detroit company the steamer Lansing was recently given a new wheel, and the Drake is now receiving a general overhauling, a new shoe, wheel, etc. On Saturday steam was gotten up for the first time on the big new side-wheeler City of Buffalo. Decorations are about completed and the steamer will soon be receiving her furniture while final touches are made at some point down the river. Engine cylinders weighing nearly twenty-one tons were shipped a few days ago from the Frontier works. They are for the Rockefeller steamer that is being built by F. W. Wheeler & Co., who were rushed with work in their machinery department. At the Frontier works the high-pressure cylinder of the W. R. Stafford has been rebored and that steamer's engines are undergoing other repairs including a refitting of her air pumps. At the same works a new wheel has been made for the steamer Pathfinder.

A telegram from Mr. R. C. Veit of the shipping and lighterage department, Standard Oil Co., New York, announces that the contract for that company's new seagoing tug will probably be awarded Saturday. Only one lake builder submitted a bid on the craft, and it is probable that the contract will go to the coast. If the tug was built on the lakes, it would be necessary to pontoon her in passing one of the St. Lawrence canals. This tug is to be of steel, 130 feet long, 25 feet 6 inches beam and 14 feet 6 inches moulded depth. She will have two masts. Her triple expansion engines are to have cylinders of 14½, 23½ and 39 inches diameter by 30 inches stroke, and the boiler is to be of the Scotch type, 13 feet 9 inches diameter and 12 feet long.

Official numbers and tonnage of new lake vessels, recently announced by the United States commissioner of navigation are as follows: Steam—L. C. Waldo, Detroit, 4,214.26 tons gross, 3,290.02 net, No. 141,421; Clara S., Detroit, 15.65 tons gross, 10.64 net, No. 127,125. Sail—Manda, Cleveland, 3,256.09 tons gross, 3,121.36 net, No. 92,696; Martha, Cleveland, 3,256.09 tons gross, 3,121.36 net, No. 92,697.

Senator is the name selected for the Wolverine Steamship Co.'s big steamer, building at Detroit.

The Constitution and Customs Laws.

Editor MARINE REVIEW: Did you ever look at section 9, paragraph 6 of the constitution of the United States in relation to customs houses, and then ask why the said customs insist that vessels trading between ports as noted are required to enter and clear, etc., etc. I wish you would make some comment on this subject. Railroads do the same work without going near a custom house. S. R. KIRBY.

Albermarle Hotel, New York, April 15, 1896.

The writer of the above communication is the father of the Messrs. Kirby of the Detroit Dry Dock Co. The paragraph of the constitution of the United States to which he refers is as follows:

"No preference shall be given by any regulation of commerce or revenue to the ports of one state over those of another; nor shall vessels bound to, or from, one state, be obliged to enter, clear or pay duties in another."

Upon first thought after reading the foregoing paragraph, it might be said that under the constitution no report of any kind to a customs official could be required of a vessel making a trip between Cleveland in the state of Ohio, and Duluth in the state of Minnesota. But if this claim was well taken our entire system of coasting laws would be unconstitutional. We have not taken the time to seek the causes leading up to the adoption of this clause in the constitution, but it can undoubtedly be explained in a manner that would leave no question as to the constitutionality of the coasting laws. We are of the opinion that the clause in question had reference to the reporting and clearing of vessels at intermediate ports. A vessel may, in a voyage between Cleveland and Buffalo, pass through the customs district of Detroit, which is in Michigan, without making a report of any kind to a collector of customs in Michigan. In other words, the main object of this clause in the constitution was to prevent interference with water commerce by the states.

Detroit's marine postal service has resumed operations with indications of marked improvement this season.

Appointments of Masters and Engineers.

Gilchrist, J. C., Cleveland: Steamers—City of Genoa, Capt. J. L. Weeks, Engineer J. D. Mitchell; City of Naples, Capt. George Bell, Engineer John Fritz; John Craig, Capt. J. C. Byers, Engineer E. J. Rae; J. C. Gilchrist, Capt. William Blattner, Engineer Henry Stone; A. P. Wright, Capt. C. T. Gunderson, Engineer J. Berney; R. E. Schuck, Capt. Olof Olson, Engineer John Parks; C. W. Elphicke, Capt. W. H. Moody, Engineer Henry Jesson; J. B. Lyon, Capt. B. Moshier, Engineer Oscar; Cumberland, Capt. W. G. Stewart, Engineer A. F. Hogle; Hiawatha, Capt. A. E. White, Engineer E. D. Butler; Columbia, Capt. F. Goodale, Engineer C. N. Allbee; Oregon, Capt. J. P. Minskey, Engineer C. A. Winship; Waverly, Capt. Frank Henrick, Engineer Turner. Schooners—F. A. Georger, Capt. J. S. Elliss; H. D. Alverson, Capt. William Landgraf; M. S. Bacon, Capt. D. C. Sullivan; Verona, Capt. Thomas Tucker; W. S. Crosthwaite, Capt. Charles Olson; S. L. Watson, Capt. S. E. Philp; T. P. Sheldon, Capt. R. Janssen; S. H. Foster, Capt. J. S. Jones.

Bradley, M. A.: Cleveland—Steamers—J. S. Fay, Capt. L. W. Young, Engineer; Alva, Capt. J. H. Wysoon, Engineer, J. N. Kirby; Geo. Stone, Capt. M. Mulholland, Engineer Ed. Black; Hesper, Capt. Paul Howell, Engineer P. H. Doyle; Pasadena, Capt. L. Stough, Engineer J. H. Gilbo, Gladstone, Capt. Henry Peterson, Engineer J. F. Mahaney; M. B. Grover, Capt. W. E. Morris, Engineer C. J. Church; City of Cleveland, Capt. C. H. Franke, Engineer Jno. McCaffrey; H. Chisholm, Capt. P. H. Smith, Engineer Albert Eggart; R. P. Ranney, Capt. Ben Lehman, Engineer J. D. Stuart; E. B. Hall, Capt. Sam Allen, Engineer Guy Hemenger; S. E. Sheldon, Capt. E. Saveland, Engineer C. W. Eaton; Fred Kelley, Capt. Alex Leith, Engineer Frank McCormick; Superior, Capt. Jas. Lawless, Engineer Geo. Reid. Schooners—Adriatic, Capt. H. F. Parker; J. Martin, Capt. S. W. Gould; A. Cobb, Capt. N. Gifford; Sandusky, Capt. A. B. Keller; D. P. Rhodes, Capt. Jno. Bridge; T. Quayle, Capt. Jas. Canniff; Negaunee, Capt. L. S. Cole; South West, Capt. A. B. Parsons; S. P. Ely, Capt. E. P. Spear.

Humphrey, M. W., Detroit: Steamers—John F. Eddy, Capt. W. E. Chateau, Engineer Andrew Carter; A. G. Lindsay, Capt. Robert Drury, Engineer F. A. Huett; Senator, (new boat building at Detroit), Capt. E. B. McQueen, Engineer —.

Teagan Bros., Detroit: Steamer—Chauncy Hurlbert, Capt. J. C. Maddock, Engineer J. C. Bennett. Schooner—D. K. Clint, Capt. Bert Peltier.

Inman B. B., Duluth, Minn.: Steamers—Henrietta, Capt. Samuel Harris, Engineer W. Amemerman; Belle P. Cross, Capt. John Cornwell; Engineer George Dingman. Schooners—S. Clement, Capt. Pat Gordon; Chicago Board of Trade, Capt. Charles Stewart; C. N. Ryan, Capt. Charles Annis.

United States & Ontario Navigation Co., A. C. Huidekoper, Manager, Conneaut, O.: Car ferry steamers—Shenango No. 1, Capt. R. McLeod, Engineer Wm. McGuire; Shenango No. 2, Capt. F. A. Dority, Engineer Wm. Elliott.

Gilchrist, F. W., Alpena, Mich.: Steamers—Viking, Capt. Albert Stewart, Engineer Robert Leach; Norseman, Capt. John Stewart, Engineer John Leach; S. C. Hall, Capt. H. Bennett; Engineer N. Richards; Garden City, Capt. H. S. Foster, Engineer P. Kneal. Schooners—Sam Flint, Capt. Thomas Stephens; Nellie Mason, Capt. Charles Hansen; Lathrop, Capt. J. Cotey; Light Guard, Capt. James Hansen; Russian, Capt. James Hamilton; Knight Templar, Capt. H. Hamilton; Kitchen, Capt. B. McCaffery. Tugs—John Owen, Capt. Thomas Lillis, Engineer D. Thompson; Frank W., Capt. John Lawson, Engineer B. Pearsons; Ralph, Capt. James Putnam, Engineer A. Denney; Arthur P., Capt. John Kenyon; Engineer S. Kossack.

Headquarters of the new Technical Club, Chicago, will be at 228 and 230 South Clark street. The building has been leased for ten years. This is the organization that is modeled after the Engineers' Club of New York. Membership is already about 200. Officers are: President, R. W. Hunt; secretary, C. E. Billen; treasurer, H. F. J. Porter.

"That was an excellent answer," Adml. Jouett remarked, "an able seaman gave to a land-lubber visitor on a man-of-war, who asked: 'What do you sailors do?' 'Well,' responded the jolly tar, 'we does about what we please until we are told to do something else, and then we does that putty d— quick.'"—Army and Navy Journal.

John Jacob Astor's big electric yacht, building by Samuel Ayers & Sons, Nyack, N. Y., from plans of Chas. D. Mosher, is of the following dimensions: Length over all, 72 feet; beam, 11 feet; draught, 3 feet 8 inches. The boat will be used on the Hudson and at Newport.

There will be a Homeseekers' excursion to points northwest, west and southwest via the popular Nickel Plate road April 21st. Low rates have been authorized for this occasion. Inquire of any agent. 56—Ap.21.



DEVOTED TO THE LAKE MARINE AND KINDRED INTERESTS.

Published every Thursday at No. 409 Perry-Payne building, Cleveland, O., by John M. Mulrooney and F. M. Barton.

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Entered at Cleveland Post Office as Second-class Mail Matter.

The books of the United States treasury department on June 30, 1895, contained the names of 3,342 vessels, of 1,241,459.14 gross tons register in the lake trade. The number of steam vessels of 1,000 gross tons, and over that amount, on the lakes on June 30, 1894, was 359 and their aggregate gross tonnage 634,467.84; the number of vessels of this class owned in all other parts of the country on the same date was 316 and their tonnage 642,642.50, so that half of the best steamships in all the United States are owned on the lakes. The classification of the entire lake fleet on June 30, 1895, was as follows:

Class.	Number.	Gross Tonnage.
Steam vessels.....	1,755	857,735.00
Sailing vessels.....	1,100	300,642.00
Unrigged.....	487	83,082.00
Total.....	3,342	1,241,459.00

The gross registered tonnage of vessels built on the lakes during the past five years, according to the reports of the United States commissioner of navigation, is as follows:

	Number.	Net Tonnage.
Year ending June 30, 1891.....	204	111,856.45
" " " 1892.....	169	45,168.98
" " " 1893.....	175	99,271.24
" " " 1894.....	106	41,984.61
" " " 1895.....	93	36,353.00
Total.....	747	334,634.28

ST. MARY'S FALLS AND SUEZ CANAL TRAFFIC.
(From Official Reports of Canal Officers.)

	St. Mary's Falls Canal.			Suez Canal.		
	1895.*	1894.	1893.	1895.	1894.	1893.
No. vessel pass'ges	17,956	14,491	12,008	3,434	3,352	3,341
T'n'ge, net registd	16,806,781	13,110,366	9,849,754	8,448,383	8,039,175	7,659,068
Days of Navigat'n	231	234	219	365	365	365

* 1895 figures include traffic of Canadian canal at Sault Ste. Marie, which was about 1/2 per cent. of the whole, but largely in American vessels.

DURING a conference at Ottawa, a few days ago, between officials of the City of Collingwood, Ont., and the Canadian ministers, Mr. Ouimet, minister of public works, was asked by Sir Mackenzie Bowell to state the policy of the government with reference to public works similar to the improvement of Collingwood harbor. Mr. Ouimet said that "the intention of the government is to place a number of harbors in the west in such a position as to justify the construction of a larger class of vessels, to secure to the St. Lawrence route the carrying trade of western Canada, which is now being diverted to the United States. Collingwood is one of the harbors for which it is intended to ask for an appropriation sufficient with the amount subscribed by the municipality to give sixteen or seventeen feet depth of water. A sum would be placed in the supplementary estimates shortly to be brought down in order that the work might be proceeded with at once. As soon as the estimates are passed construction would be entered on with vigor, so the harbor may be made use of for the purpose indicated." This would indicate that the dominion officials realize the necessity of improving some of their grain shipping and receiving ports on the lakes, if they are to compete at all in the future with the big ships and deep channels of the United States government, that have already succeeded in diverting the great bulk of Manitoba grain shipments to American routes in reaching the seaboard.

GEN. CRAIGHILL, chief of army engineers, would certainly favor the vessel interests of the lakes by hurrying the appointment of a successor to the late Gen. Poe. Just now there are at least two sections of the 20-foot channel that require only some sweeping and other light work to complete them and render them entirely available for use shortly after the opening of navigation. It is understood that in one case the contractors will probably refuse to send dredges to do this work in the spring, on the claim that they are not required to do so by the terms of their contract, and that they have more profitable work elsewhere. This delay may prove very serious to the vessel interests. Lieut. Cavanaugh, who has been temporarily in charge of this work, has proven a very capable and obliging official, but on account of the temporary nature of his

position, it is thought that he is hampered in making such arrangements with contractors as might tend to overcome difficulties of the kind referred to. Gen. Craighill says that the department will wait until the river and harbor and fortification bills become laws before making changes in the engineer corps that will involve the appointment of a successor to Gen. Poe. In the meantime it would seem that the department would be justified in giving special attention to the final work on these lake contracts.

THE PEOPLE of Chicago certainly get their share of anything good that is in sight when they go after it. After absolutely neglecting their river interests for several years, they are suddenly aroused to the fact that the main river is liable to suffer, on account of a report from the government engineer, Major Marshall, recommending nothing for the main river but large appropriations for another part of the city, known as South Chicago. A row is stirred up over the engineer's report, and as a result the most influential men of the city become interested in harbor improvements. They succeed in securing for Chicago river a clause in the river and harbor bill that is entirely different to provisions relative to other harbors. Appropriations for Buffalo, Cleveland and other places provide for dredging only to government lines, a short distance within the harbor. But as Chicago river was some time ago turned over to government control, practically all of its navigable parts are now to be dredged by the government to 16 feet at an expense of \$650,000. Of this amount, \$50,000 is available at once and the balance is provided for under the continuous contract system. For South Chicago, appropriations are also very favorable. The bill carries \$75,000 for Calumet harbor and \$50,000 for improving Calumet river from its mouth to the forks.

ALTHOUGH the sentiment in Washington ten days ago would indicate that the Detroit river bridge bill could be passed in the senate at any time that it might be brought up in that body, and although some of the vessel owners themselves had given up all hope of preventing the passage of the bill in the senate, opinions regarding the measure have changed again, and the position of the vessel interests is as strong as it has ever been. Mr. Harvey D. Goulder refuses to give out details of anything that may have been accomplished during his last visit to Washington, but other officers of the Lake Carriers' Association do not hesitate in claiming now, stronger than ever, that no bill permitting of a pier or obstruction of any kind in the navigable channel of the Detroit river will pass the present congress.

A CABLEGRAM from London announces that Col. Wm. Ludlow, military attache of the American legation, has been called home. Col. Ludlow's return to this country is probably due to certain changes in stations soon to be made among officers high in the ranks of the engineer corps and who have to do with big river and harbor and fortification works throughout the country. If such is the case, there are a great many vessel owners on the lakes who would be pleased to see Col. Ludlow assigned to complete the Sault lock and other big works on the lakes, which were so long in charge of the late Gen. Poe.

THROUGH an inquiry made by Mr. Lyman E. Cooley of Chicago, member of the United States Deep Waterways Commission, it is learned that the Plimsoll load line act was passed in England in June, 1890, and was applied immediately to over 2,800 vessels.

Undoubtedly the greatest triumph of marine engineering at the present is the saving made in fuel consumption. The marine engineer with a given amount of coal now can do twelve times the work he did fifty years ago. An eminent authority has recently computed that whereas in 1840 it was possible to move at the rate of eight knots per hour from the expenditure of one pound of coal only .578 ton displacement of vessel, 10 per cent. of which would be cargo earning freight, it became possible in 1895 to move at the same rate of speed from the expenditure of one pound of coal a displacement of 3.4 tons of vessel, 60 per cent. of which may be cargo earning freight, owing to the decrease of weight of hull from 40 to 28 per cent. of the displacement and the decrease of weight of machinery from 50 to 12 per cent. of the displacement. This means that at the present time economical freight steamers have been so perfected that it is now possible to transport two tons of cargo earning freight at a speed of eight knots per hour on a fuel consumption of only one pound of coal, and it costs very little more to send such freight at the rate of ten knots.—The Engineer, New York.

The Engineer of New York says very truthfully that the circulation of a publication of any kind has nothing whatsoever to do with its advertising value, so far as mere numbers are concerned. A paper which circulates 5,000 copies (paid for) among the buying class is far better for an advertiser than one which circulates 50,000 copies among the reading class.

An advertisement elsewhere in this issue calls for bids on dredging at Ashtabula.

Sault River Regulations.

Officials of the revenue cutter service, treasury department, have issued the regulations for navigation of St. Mary's river. The rules are in substance the same as those printed in the last issue of the REVIEW. The wording and arrangement of them have been changed somewhat, but provisions are as suggested by Capt. Wm. S. Mack and other representatives of the Ship Masters' Association who went to Washington to consult the revenue cutter service officials on the subject.

Since the publication of these rules criticism regarding them from a number of competent vessel masters has brought out several important points, nearly all of which have reference to the requirements being too stringent. It is claimed, for instance, that if the rule requiring vessels to remain a half mile distant from one another in certain parts of the river is rigidly enforced, there will be so much delay, especially in early morning, when the fleets at the upper and lower end of the river begin to move, that protests of a strong kind will follow the first attempt to put the regulations into effect. In answer to this the revenue cutter officials say that they have taken the safe course of adopting regulations submit-

without a tow moving in the same direction nearer than one-half of a mile between the points named in rule 1. But a steamer without a tow may pass a steamer with a tow between the following points, to-wit: Turning channel buoy in northern part of Mud lake and Everen's point, and between the northern end of the Dark Hole and black buoy No. 13 in Little Mud lake.

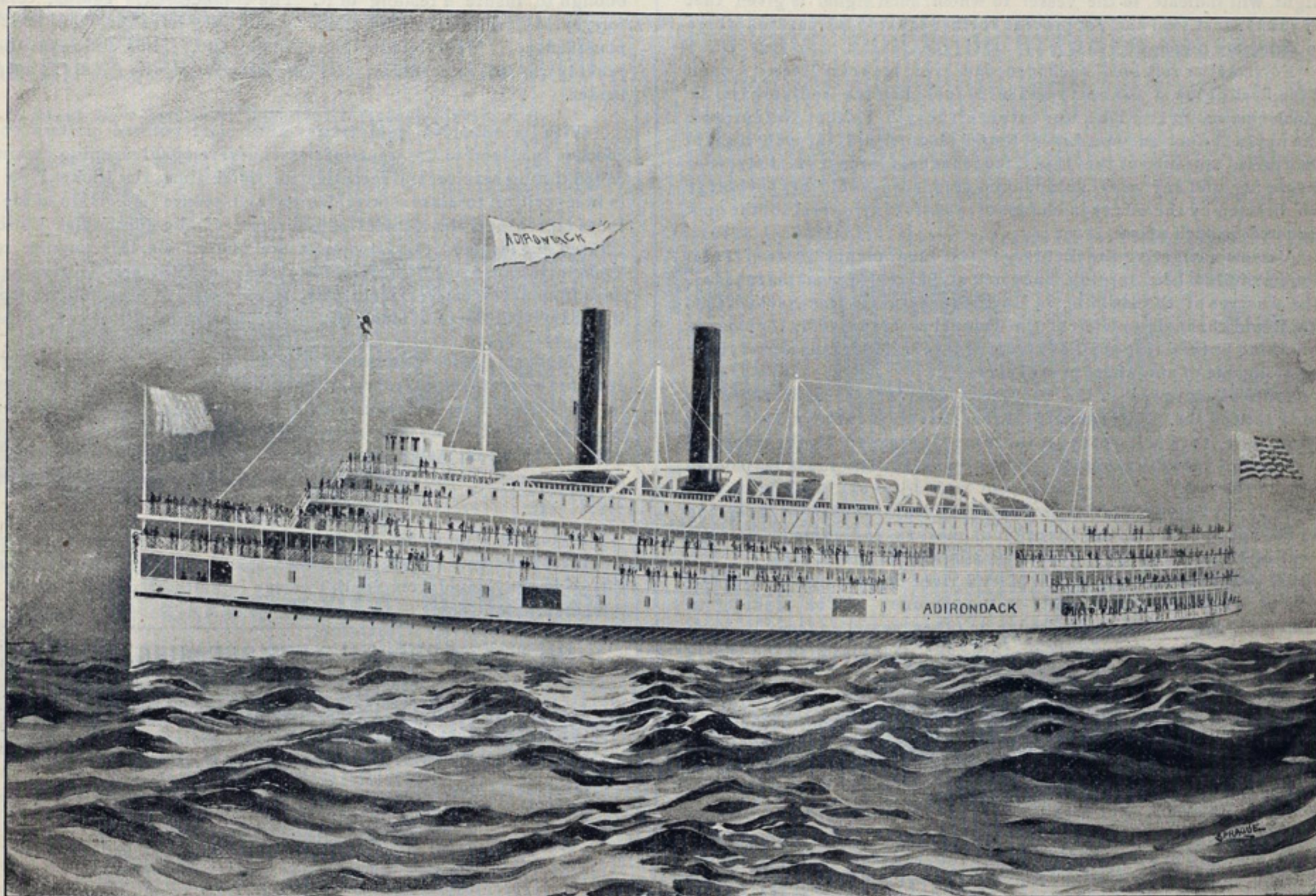
BOUND DOWN.

"No vessel shall pass or approach another vessel moving in the same direction nearer than one-half of a mile between the points named in rule 1.

PASSING.

"All vessels navigating the St. Mary's river may pass other vessels moving in the same direction between Detour light-house point and the turning channel buoy in the northern part of Mud lake, and between the northern float lights of the 20-foot channel, leading from the Neebish channel into Hay lake, and the crib light at the southern entrance of the 20-foot and Little Rapid channels.

"Special attention is called to rule 24, of the act of congress approved



STEAMER ADIRONDACK—LATEST TYPE OF HUDSON RIVER BOAT.

Two steamers of this type are now under construction at the yard of John Englis & Sons, Greenpoint, Brooklyn, N. Y. They will cost complete about \$1,000,000 each and are to be owned by the People's Line of Albany, N. Y., a corporation that is closely allied with the New York Central Railway Co.

ted to them by an organization of vessel masters. They will try these regulations, giving Capt. Davis, who is to be in direct charge, authority to use discretion liberally, and if changes are required they can be made without great delay, as it will not be necessary to go to congress to make such changes. The rules now have the official sanction of the treasury department and they are on this account printed herewith in the revised form in which they come from the government officials.

LIMIT OF SPEED.

"No vessel ascending or descending St. Mary's river shall proceed at a greater speed than seven miles an hour between the following named points, to wit: Between the turning channel buoy in the northern part of Mud lake and the northern float lights of the 20-foot channel of Hay lake, leading from Neebish channel, and between the crib light at the southern entrance of the upper 20-foot and Little Rapid channels, and the government pier at Sault Ste Marie, and between the western end of the St. Mary's Falls canal piers and Big Point.

BOUND UP.

"No steamer without a tow shall pass or approach another steamer

Feb. 8, 1895, giving the right of way to the descending vessels in the St. Mary's river.

"In case one steamer desires to pass another going in the same direction on the said river, at a point where such passing is permitted by these rules, the pilot of the steamer astern, shall, if he intends to pass the steamer ahead on the right hand or starboard side indicate such intention by giving one short blast of the steam whistle, and if he intends to pass such steamer ahead on the left hand or port side, he shall indicate such intention by giving two short blasts of the steam whistle. Upon the pilot of one steamer astern of another giving such signal the pilot ahead shall immediately answer by giving the same signal; but if he does not think it safe for the steamer astern to attempt to pass at that point, he shall immediately signify the same by giving several short and rapid blasts of the steam whistle; and under no circumstances shall the steamer astern attempt to pass the steamer ahead until such time as they have reached a point where it can be safely done, when said steamer ahead shall signify her willingness by blowing the proper signals; then the steamer ahead shall slacken to a slow rate of speed and the steamer

astern shall also slacken her speed and pass slowly the overtaken steamer at no nearer distance than 500 feet, nor attempt to cross the bow or crowd upon the course of the overtaken vessel. The boat ahead shall in no case attempt to cross the bow or crowd upon the course of the passing steamer.

"Steamers bound in opposite directions shall slow to half speed within one-half of a mile of each other until each has passed the other.

GENERAL REGULATIONS.

"The patrolling vessels of the revenue cutter service shall always have the right of way over all other vessels as indicated by the sailing signals given by such patrolling vessel.

"Three distinct blasts of the steam whistle, when sounded from a patrolling vessel, will indicate that the vessel to which such signal is given is proceeding at too high a rate of speed, and such vessel must immediately moderate her speed accordingly.

"Three long blasts of the steam whistle followed by one short blast, when sounded from a patrolling vessel, will indicate that the vessel to which such signal is given must stop until further orders from the patrolling vessel.

"Two red lanterns, one over the other, hoisted on a patrolling vessel at night, will indicate to the vessel to which such signal is given that such vessel must stop and not proceed further towards the position where such lights are displayed.

"No vessel or raft shall anchor in said river between Everen's point and the float lights at the north end of 20 foot channel, leading from the Neebish channel to Hay lake, nor between the crib light at the entrance of the upper 20-foot cut and Little Rapid channel and the crib light at the northern entrance of the Hay Lake channels, except in distress or during a fog, and any vessel so anchored must always shift her anchorage when directed by the officer in charge of a patrolling vessel to the spot designated by such officer.

"Vessels navigating the St. Mary's river may anchor between Point Detour and Mud lake turning buoy and at Sailors' Encampment close to the wharves of the sawmill; in Hay lake between the Neebish and Little Rapid channels outside of the channel as indicated by the ranges, but nothing in this rule shall be construed to prohibit any vessel from lying alongside of any wharf in said river.

"Rafts being towed in the St. Mary's river will be required to use what is termed the "old channel." From Harwood point to Mud Lake turning buoy, they will move at the time designated by the officer in charge of the patrolling vessel. When lying by they must be moored out of the channel.

"In navigating the St. Mary's river, in all cases where the foregoing rules are not applicable, the attention of masters and pilots is called to the sailing rules contained in the act of congress of Feb. 8, 1895.

"All vessels navigating the St. Mary's river, in passing dredges and vessels at work on improvements to the channel, will be required to slacken their speed upon such dredge or other vessel engaged in such improvement giving the signal of three distinct blasts of the steam whistle.

"The pilot of every steamer descending the St. Mary's river shall, when abreast of the black buoy at Rains' shoal and before passing around the bend of said river at Sailors' Encampment, give a signal of one blast of the steam whistle of ten minutes duration, which signal shall be answered by a blast of the steam whistle of the same duration by any vessel ascending said river within hearing. The pilot of every steamer ascending said river, not having heard such signal from a descending steamer, shall, when abreast of Everen's point, and before passing around the bend of said river at Sailors' Encampment, give a signal of one blast of the steam whistle of ten seconds' duration, which shall be answered by a blast of the steam whistle of the same duration by any vessel descending said river within hearing. After such signal of one blast of the steam whistle of ten seconds shall have been given and answered, the usual passing signal must be given.

"Captain A. B. Davis, revenue cutter service, commanding United States steamer Johnson, will, until otherwise ordered, have supervision of the enforcement of the foregoing rules and regulations, and all complaints or appeals arising under them will be made by parties concerned to that officer."

Trade Notes.

Steel work for another big boiler plant, that of the New Britain Knitting Co., will be furnished by the Berlin Iron Bridge Co., East Berlin, Conn.

The Empire boiler cleaning treatment has been applied to the steamer Castalia through the Cleveland agency, Alex. C. Bates, Wade Building, Cleveland. This treatment has been applied to ocean and sound steamers with satisfaction. It has fulfilled requirements in rolling mill boiler practice, and from the quality of water used this is considered a severe test.

A concern in Cleveland that is by no means of small proportions

does nothing else but furnish milk to vessels in the harbor during the navigation season. It is called the Marine Milk Depot, and is located at the east end of Main street bridge. Leslie Van Orman, who recently purchased the business, has telephone service, a delivery boat and other features of convenience connected with it.

Although the Buffalo Forge Co. of Buffalo, N. Y., has been building center-crank automatic horizontal engines for several years, they have only recently issued a catalogue devoted to engines. They have waited until enlarged facilities and absolute correctness with all parts of their engines would enable them to push sales. This initial catalogue is called "B" 96 and deals with side-crank and self-contained horizontal engines with throttling governors, center-crank automatic cut-off horizontals, double and single automatic cut-off uprights, etc., for electric lighting and general refined service.

A most unique bit of advertising comes from the American Blower Co. of Detroit, manufacturers of blowers and various kinds of blast apparatus. The enterprising advertising department of this company has prepared in true legal form a document containing all the verbiage, seal etc., of an injunction. Legal paper, written signatures and print of the typewriter kind are all included in the document, making it interesting enough to insure a reading of it. The injunction is against competitors, who are warned against claiming that they have the "best article of manufacture," "an article without equal," etc. Then follows, with engravings, a full description of this company's new "A B C" hot blast heater.

With its splendid equipment, uniformed colored porters on day coaches to attend to the wants of passengers, elegant sleeping cars, unexcelled dining service, and facilities for quick time, the Nickel Plate road is in a position to make a favorable bid and secure its portion of the business en route to the General Conference of the Methodist Episcopal Church at Cleveland, O. Low rates are offered via this popular route. Tickets on sale April 29th, 30th, May 1st and 12th, good returning five days from day of sale. Tickets may be extended to June 2nd by depositing them with the joint agent within five days from date of sale.—54Ap 30.

"Modern Steam Generators" is the title of a 200-page book that contains a great deal of information on boilers. Owners of steam vessels on the lakes will be interested in it. It is valuable also to the mechanical engineer. Marine and stationary boilers of all kinds are illustrated, together with boats and plants in which these boilers are located. No price is named for the book. It is published by Wickes Bros., Saginaw, Mich.

The steamer Pahlow has the honor of being the first vessel to pass the straits of Mackinaw in 1896. She passed up at 6 a. m. April 16. The steamer City of Berlin, bound from South Chicago to Fairport, passed down at 12:30 p. m. on the same day.

PROPOSALS FOR DREDGING.

Ashtabula, O., April 10, 1896. Sealed proposals will be received by The Lake Shore and Michigan Southern Ry. Co., The Pittsburgh, Youngstown and Ashtabula R. R. Co., operated by the Pennsylvania Co., and the City of Ashtabula, Ohio, at the office of the City Clerk for the said City of Ashtabula, at 12 m., Saturday, May 16, 1896, for furnishing the necessary labor, material and the use of the necessary dredges, tugs, scows and all other tools and appliances, for dredging and improving the river channel at Ashtabula Harbor, Ohio, from the north side of the swing bridge to the upper end of the docks on said channel, according to the maps, plans and specifications therefor, on file in the office of the Engineer employed by said City of Ashtabula.

Bids must be made with the express understanding that the City of Ashtabula shall only be liable for one-third ($\frac{1}{3}$) of the contract price of said excavation and improvement, that the remaining two-thirds ($\frac{2}{3}$) is to be paid one-third ($\frac{1}{3}$) by the Lake Shore and Michigan Southern Ry. Co., and one-third ($\frac{1}{3}$) by the Pittsburgh, Youngstown and Ashtabula R. R. Co., operated by the Pennsylvania Co., as provided by the specifications hereunto attached.

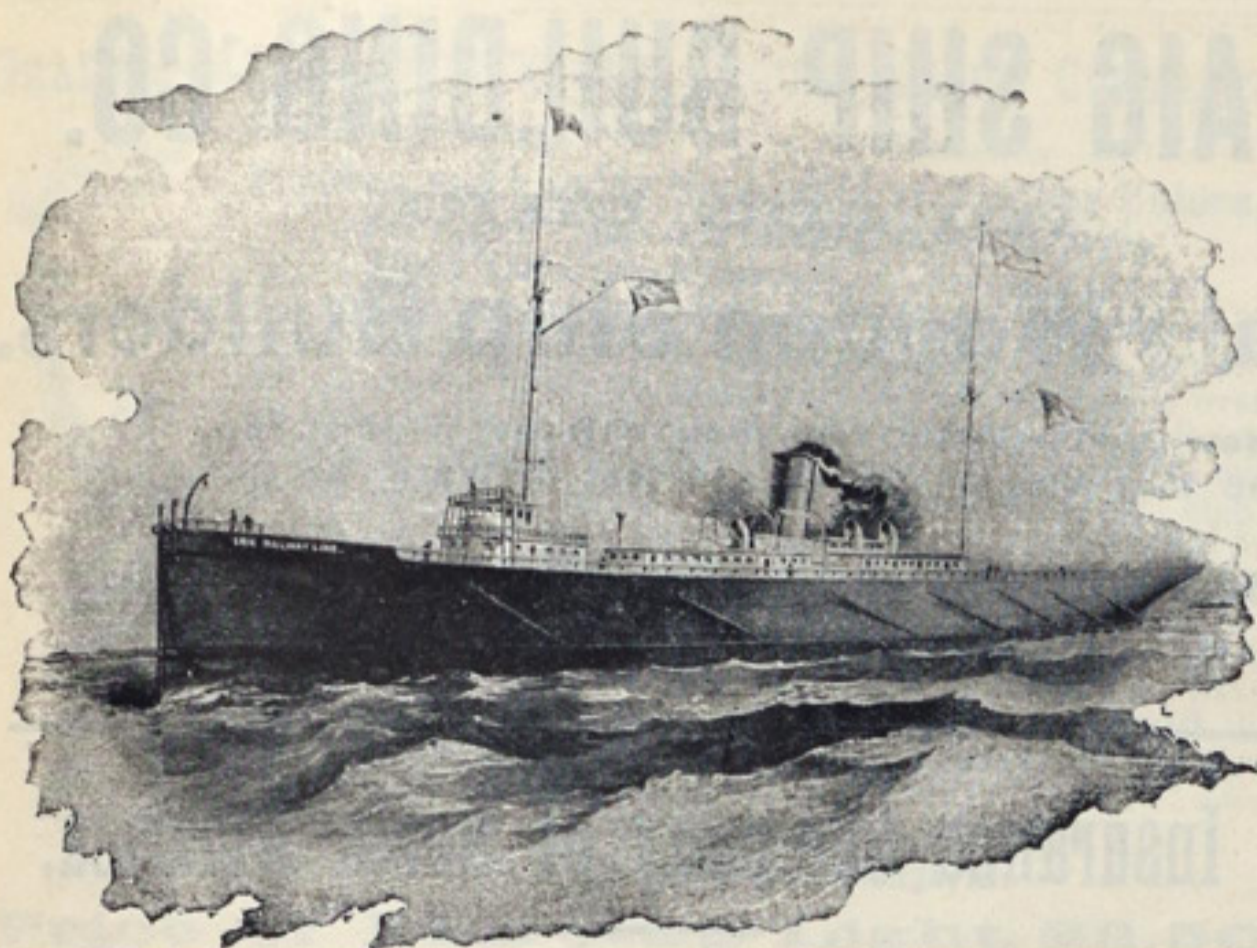
Each bid must be accompanied by a bond, signed by at least two approved sureties, in the amount of Five Thousand Dollars (\$5,000.00) Dollars, conditioned that if the bid is accepted, a contract will be entered into, and the performance of it properly secured.

Bidders are required to use the printed forms, which will be furnished on application at the Engineer's office.

The right is reserved to reject any or all bids, and to waive any informality.

By order of the Council.

A. B. PHILLIPS, City Clerk.



Rapid Fueling Docks, DETROIT RIVER.

JAMES GRAHAM, Foot Twenty-first St., Detroit,
Below Routes of Passenger and Car
Ferry Lines.

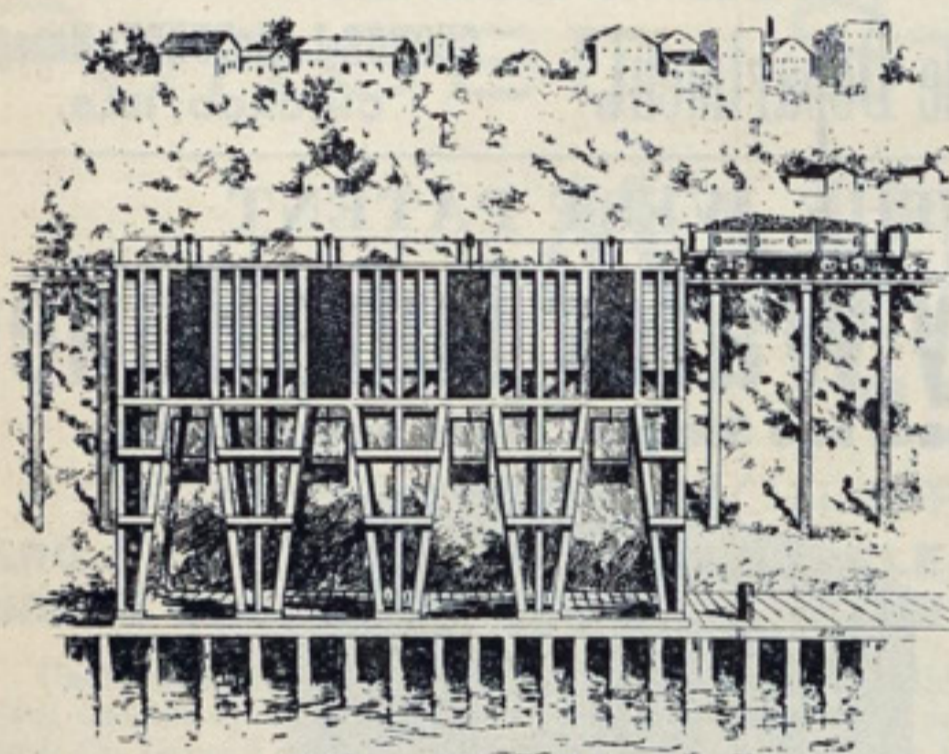
Pockets and Chutes arranged for different types of vessels.

BEST STEAM COAL.

Large Supplies and every effort to give dispatch, day and night. Wide stretch of river for tows, and plenty of water at dock at all times.

FUEL DOCKS OF OSBORNE, SAEGER & CO.

Cuyahoga River, just above Superior St. Viaduct, Cleveland, O.



Best
Youghiogheny
Steam Coal
Furnished
Day or Night.
No delay as
Elevated
Pockets
are used.



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Manufacturers of
METAL POLISH, * BUFFING COMPOSITIONS.

A great labor saver.
Especially adapted for Marine Engines.
1 lb. tin boxes, 45 cents; 5 lb. pails, \$1.50.

94 Holmden Ave., CLEVELAND, O.

John Thompson, 123 River St., Agent, Cleveland, O.

U. S. ENGINEER OFFICE, Telephone
U. Building, Detroit, Mich., April 4, 1896.
Sealed proposals for dredging at several of the
harbors on East shore of Lake Michigan, be-
tween Charlevoix and Muskegon, Mich., will
be received here until 12 o'clock M. (Standard
time), April 25, 1896, and then publicly opened.
Apply here for information. G. J. LYDECKER,
Lt. Col., Engrs. Apr 25

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**St. Ignace
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By reason of the dissolution of the firm of Murphy, Conlan & Company, of Buffalo, N. Y., this boat will be sold by the undersigned at public sale, at her mooring in Erie Basin, Buffalo, N. Y., on the 15th day of April, 1896, at 2 o'clock in the afternoon. She is 140 feet over all, 31 feet beam and 10 feet depth of hold; tonnage of 299; licensed capacity for 1,000 passengers, and a speed of 16 miles an hour. Equipped with one 650 H.P. fore-and-aft compound engine, 18x36, with 27 inch stroke; 9x16 foot marine boiler. Full electric lighting plant, with 256 H.P. engine, 259 light dynamo, together with 4 metallic life-boats, 2 metallic life-rafts, 1,000 life-preservers, bar, soda fountain, etc., and all equipage, furnishings, and tackle. Built spring of 1892, and in excellent condition. For terms of sale and further information, address,

JOSEPH G. DUDLEY, Owner's Agent, 35 Dun Bldg., Buffalo, N. Y.

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Sale.**



**Steamers
Romeo
and
Juliet.**

These beautiful twin Steamers are in perfect condition, each a perfect model of the other, with Cabins, Single Deck, Twin Screws, two sets Engines, fully equipped and allowed to carry 150 passengers each.

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Classed Vessels Receive the Lowest Rates of Insurance.

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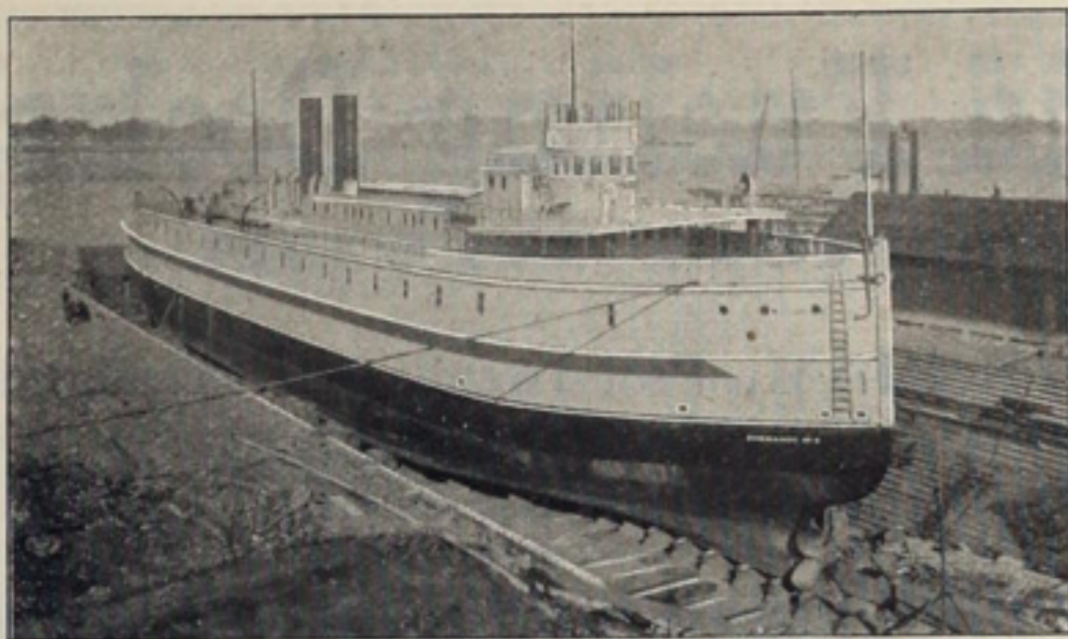
SINCLAIR STUART, Surveyor of Iron and Steel Construction and Engineer Surveyor.

Surveyor for District comprising Lakes Superior, Michigan and Huron and Lake Erie, as far East as, and including Cleveland, O.

EDWARD CASKIN, Potter Building, Main Street, Buffalo, N. Y., Surveyor for District comprising Lake Ontario and Lake Erie, as far West as, but not including Cleveland, O.

Application for survey of vessels and subscriptions to Register Book will be received by the surveyors or at the office of

The United States Standard Steamship Owners', Builders' & Underwriters' Ass'n, Ltd
Post Building, 16 and 18 Exchange Place, NEW YORK.



Shenango No. 2, 300 feet long, 51 feet beam.

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Works, Red Bank, N. J.



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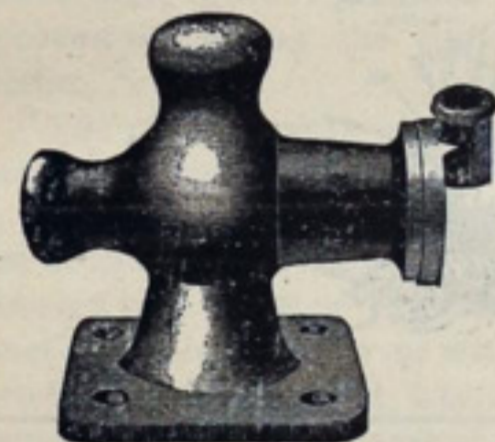
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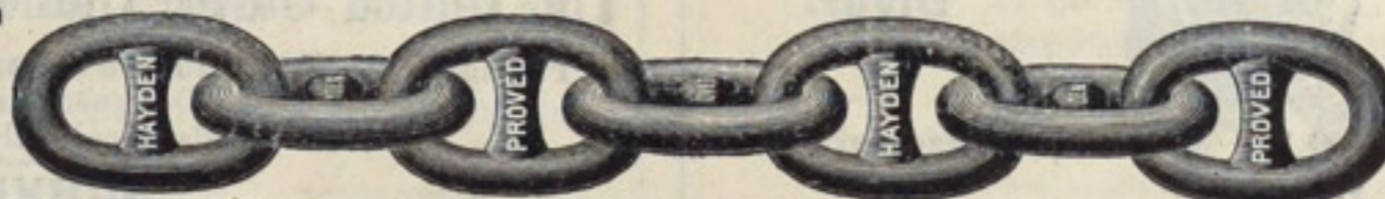
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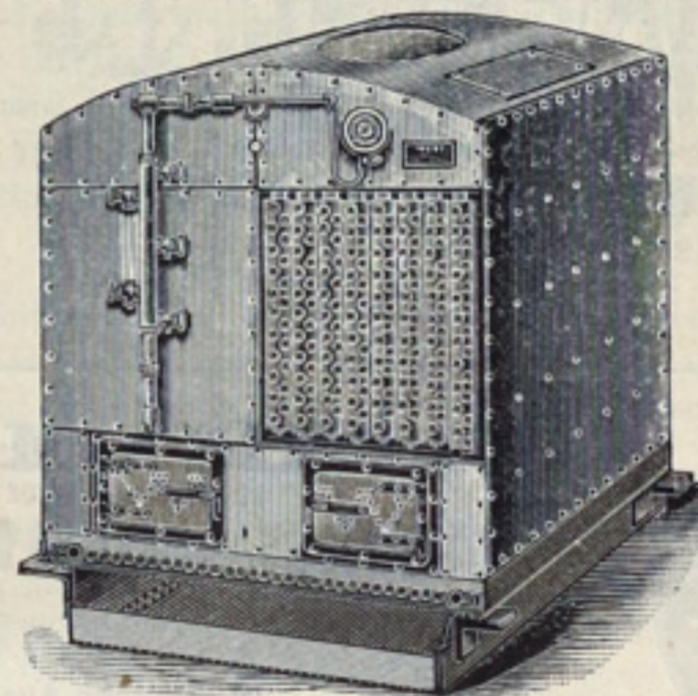
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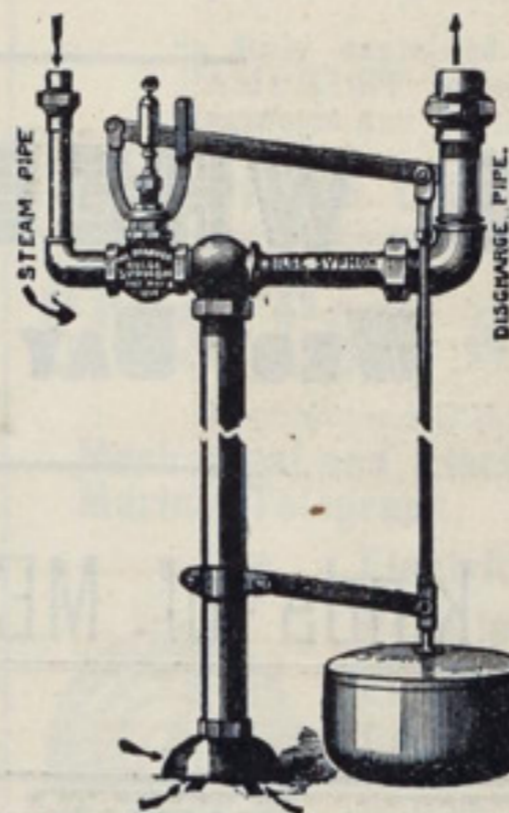
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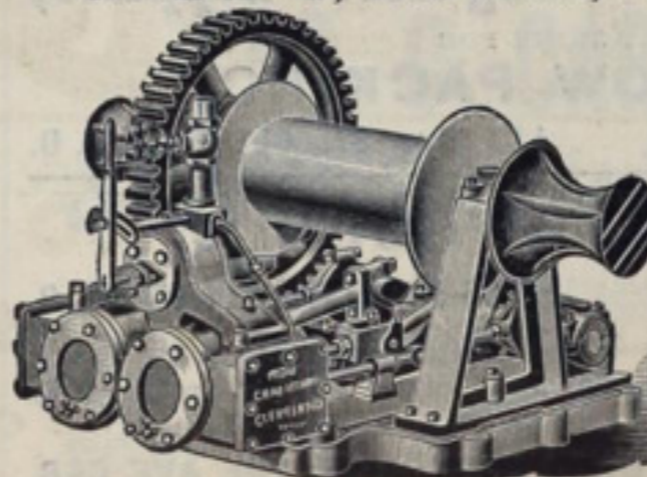
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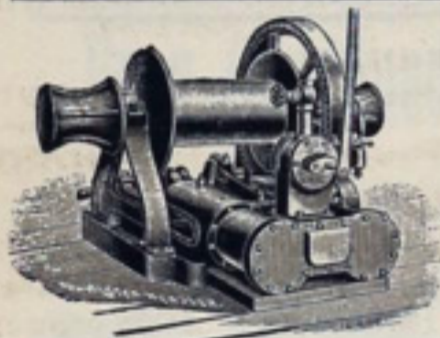
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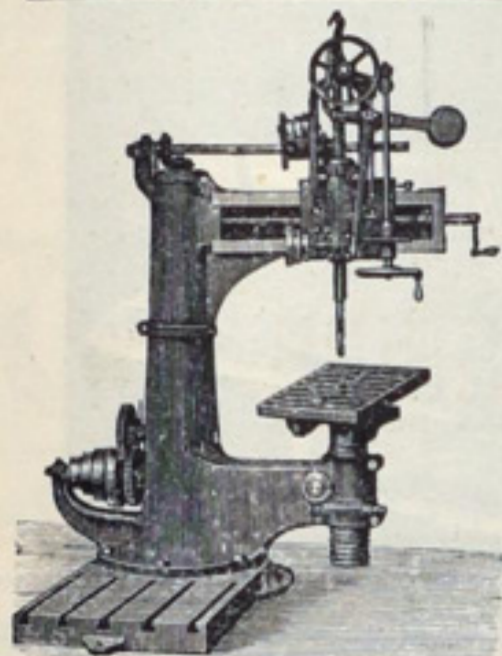
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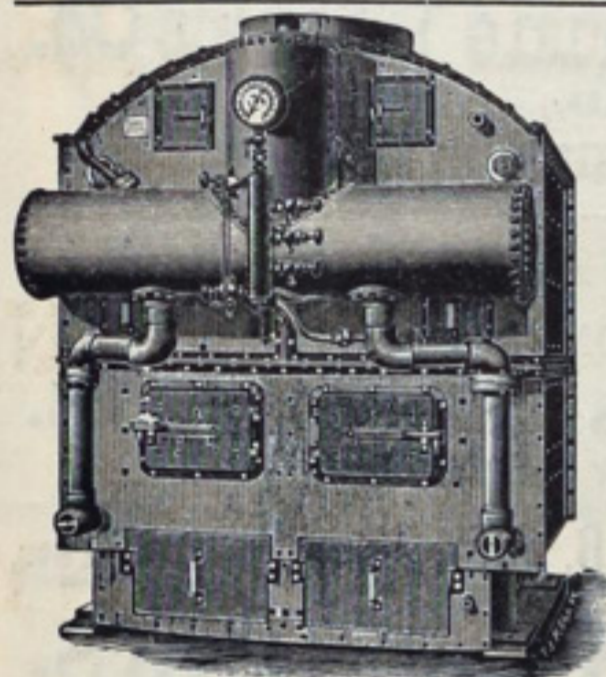
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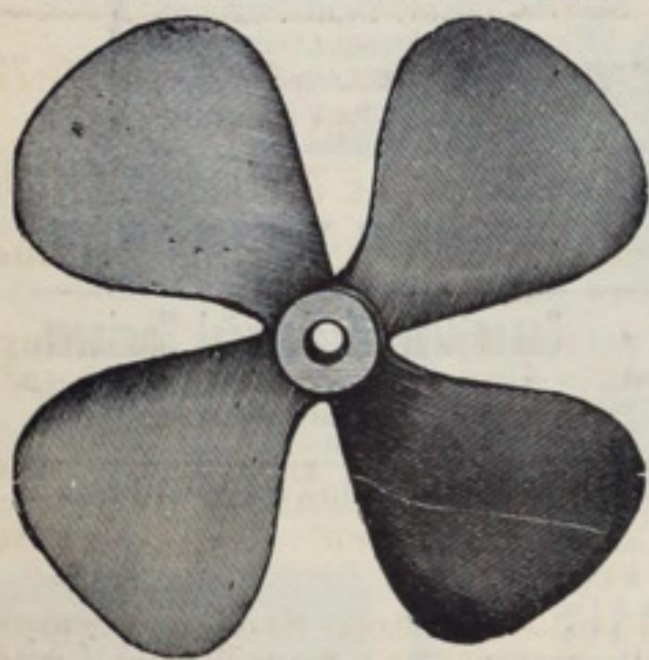
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**Metallic
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Metallic Life Rafts, Marine Drags.

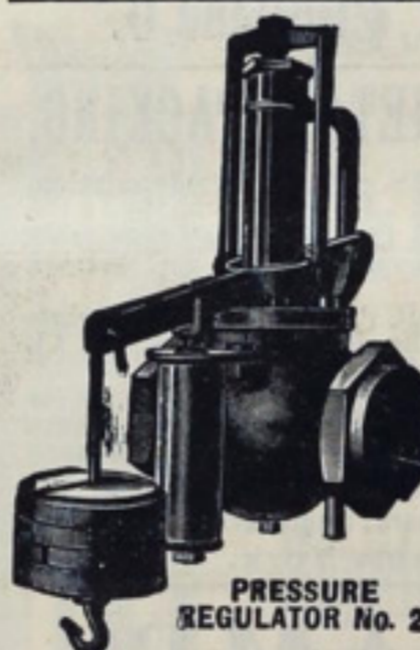
Manufacturer of Woolsey's Patent Life Buoy, which is the
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**The "DAVIS" Pressure Regulator
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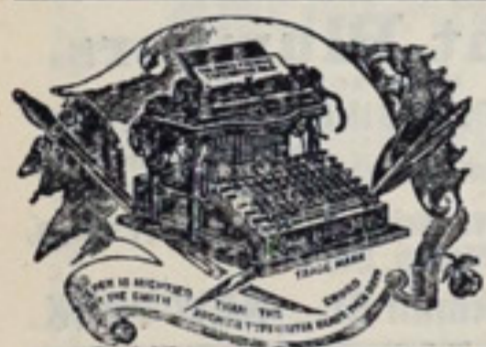
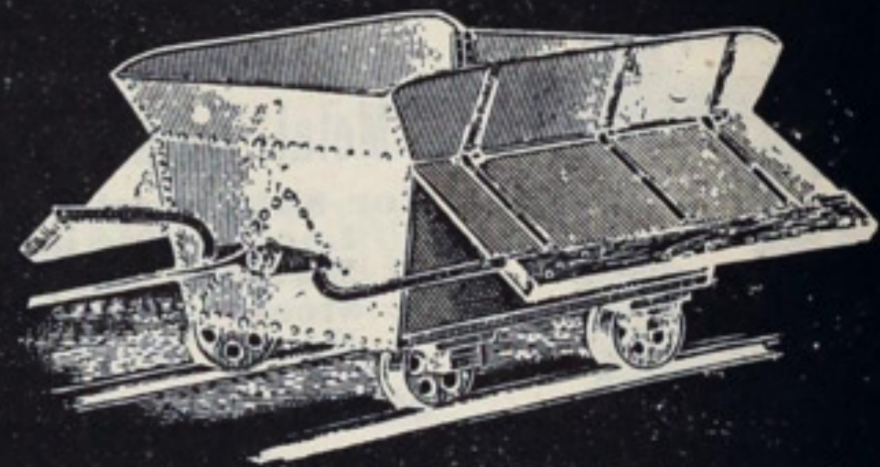
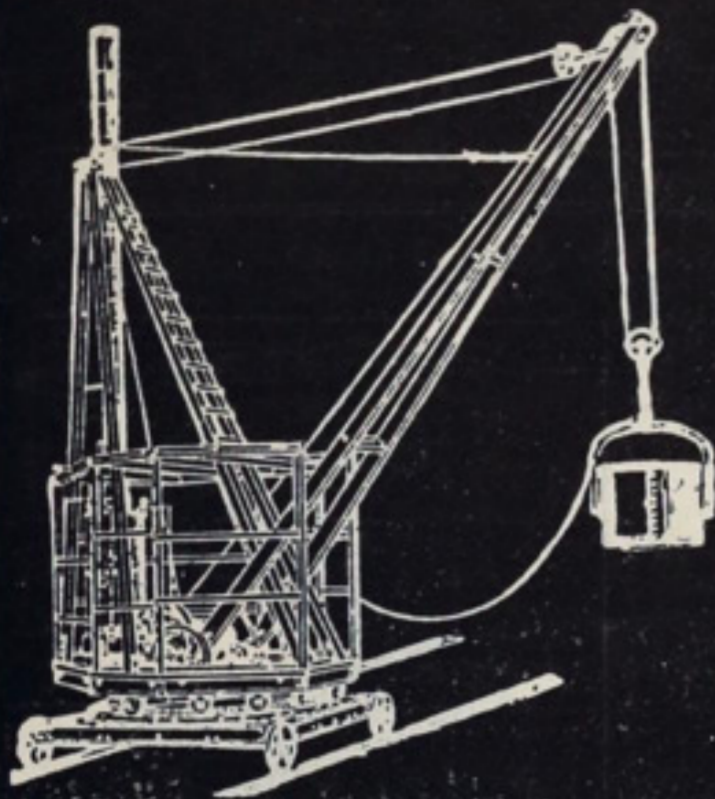
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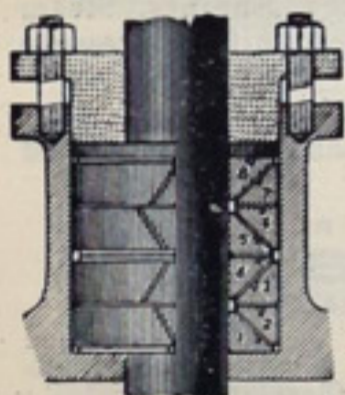
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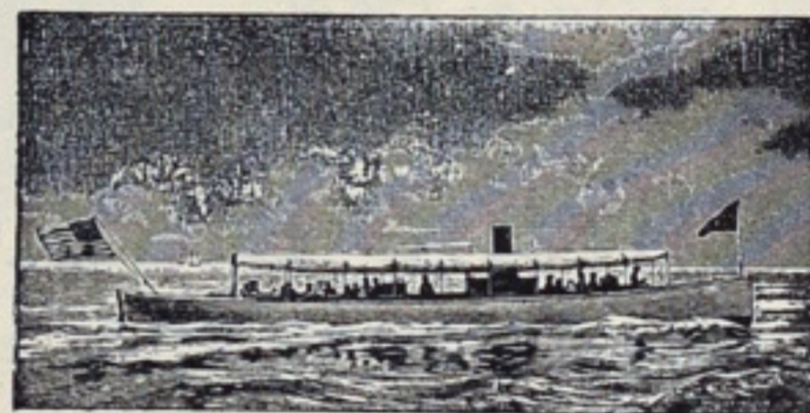
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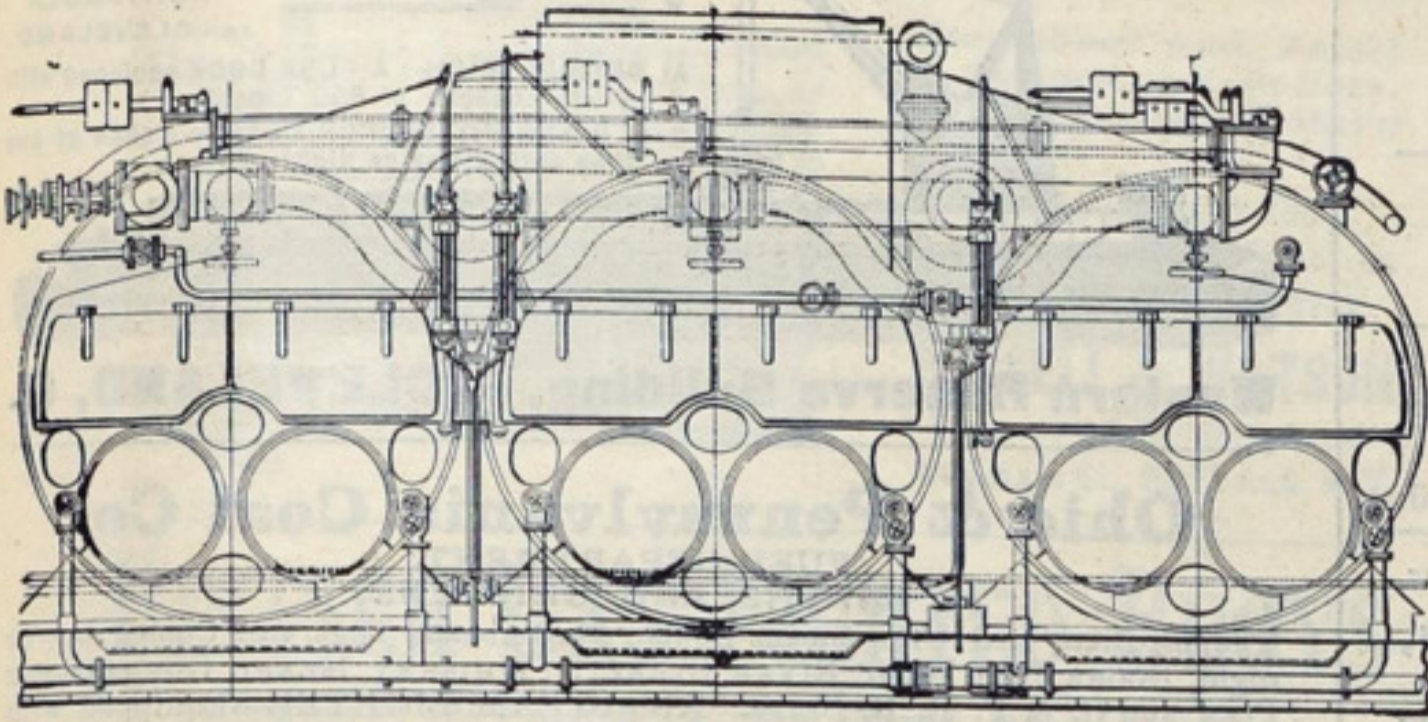
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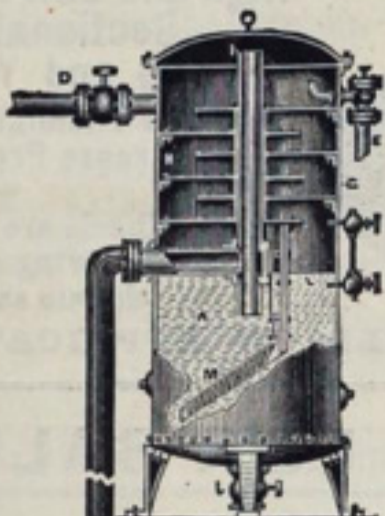
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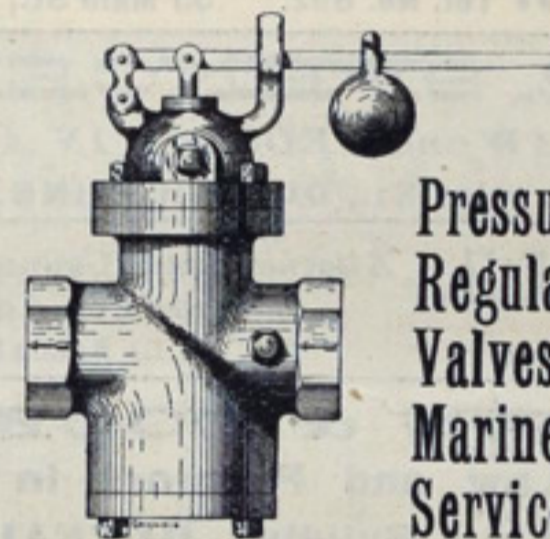
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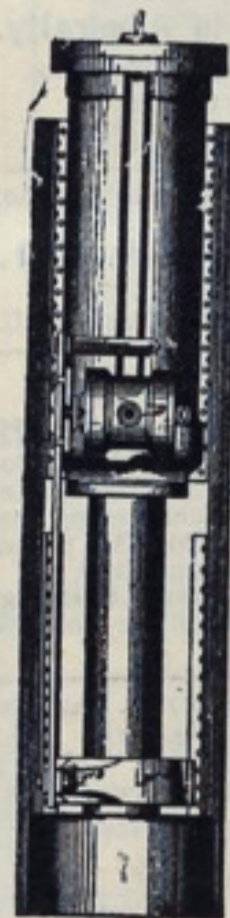
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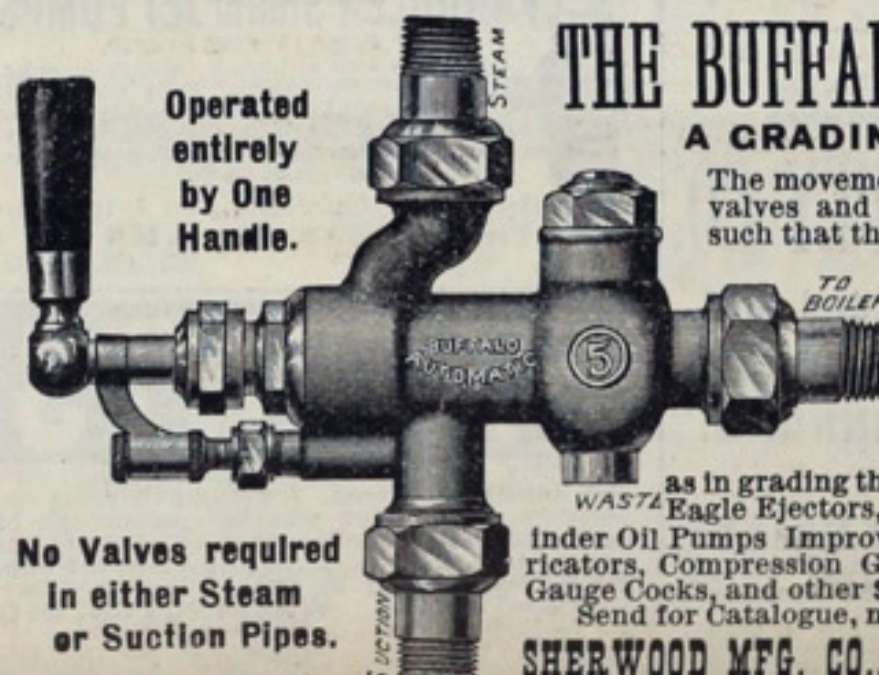
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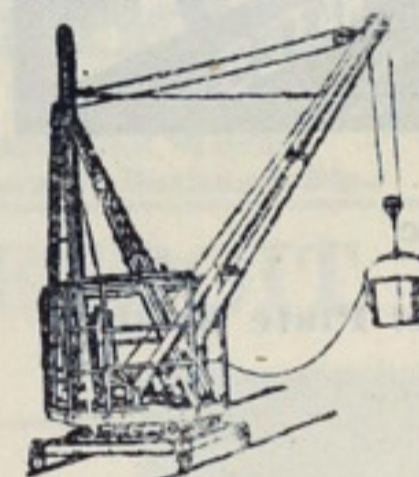
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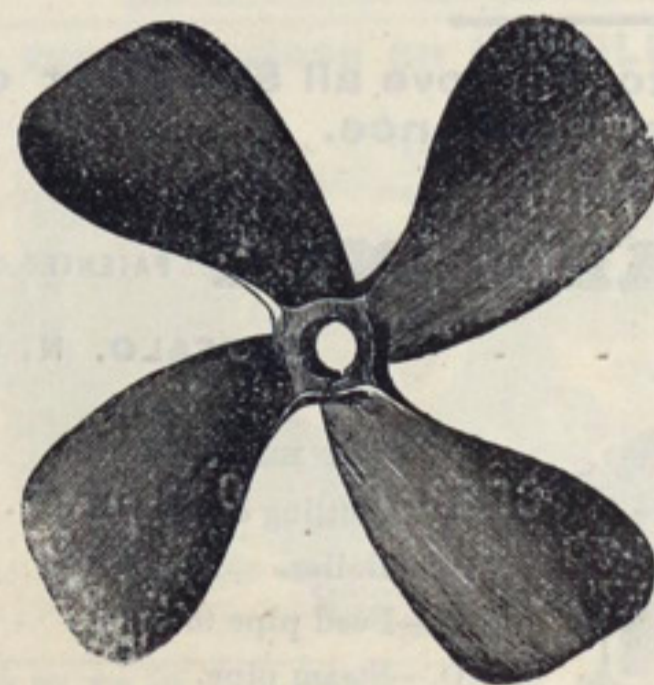
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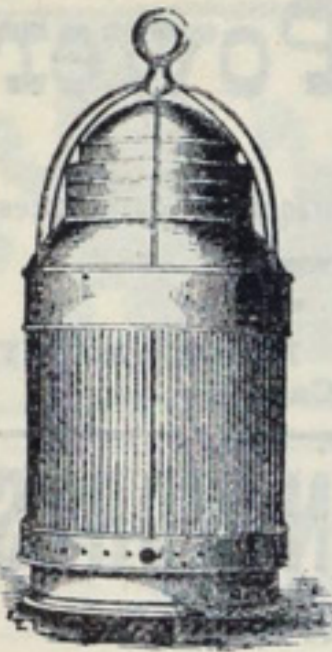
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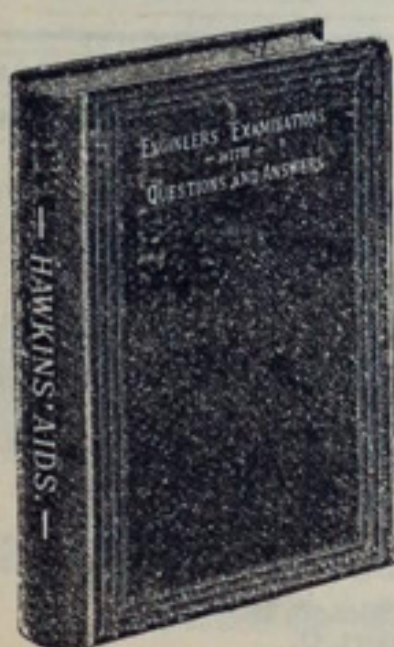
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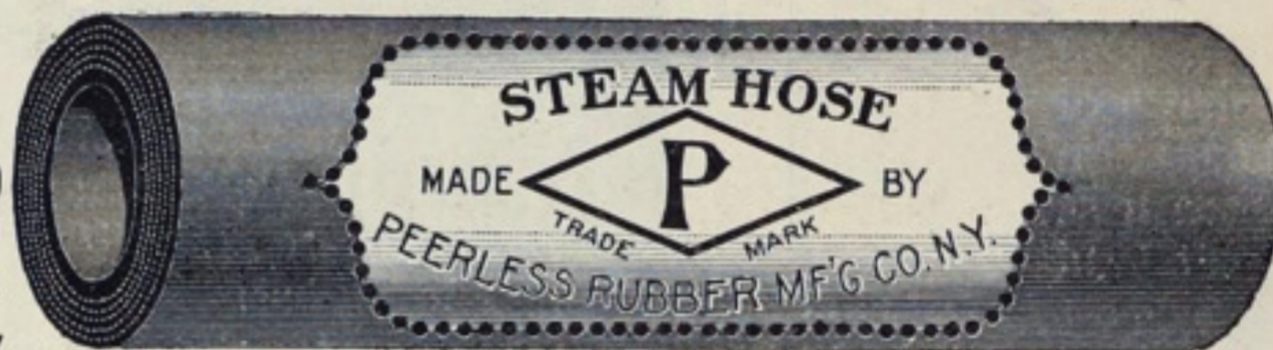
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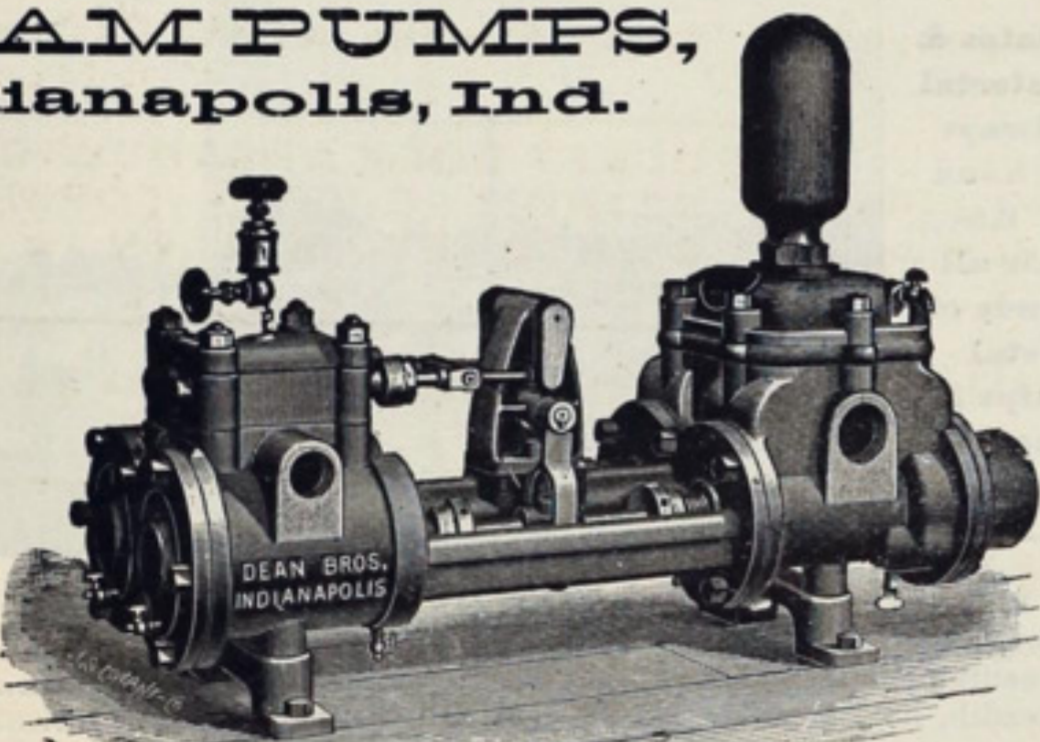
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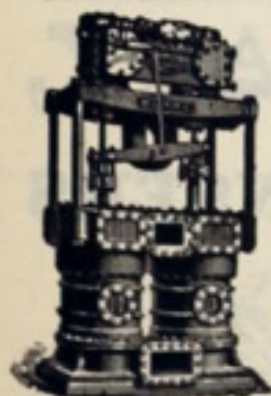
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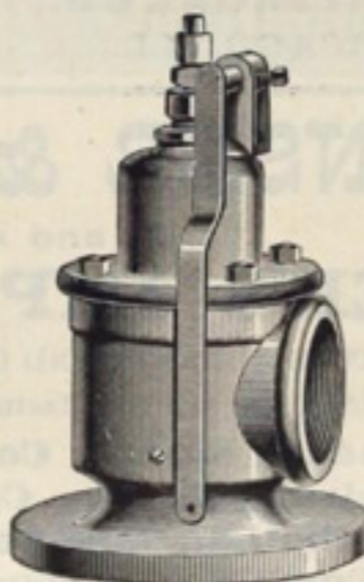
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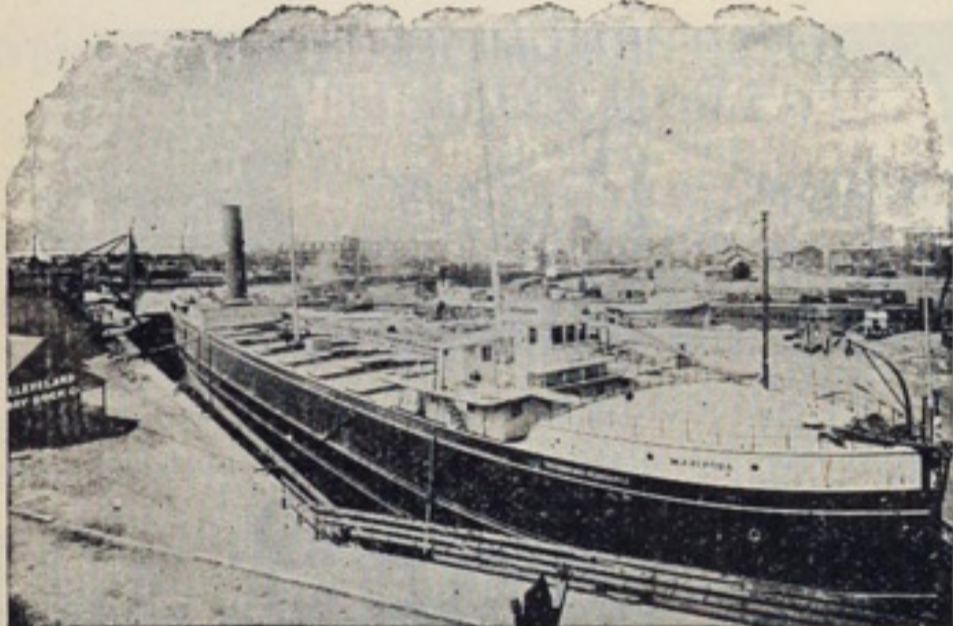
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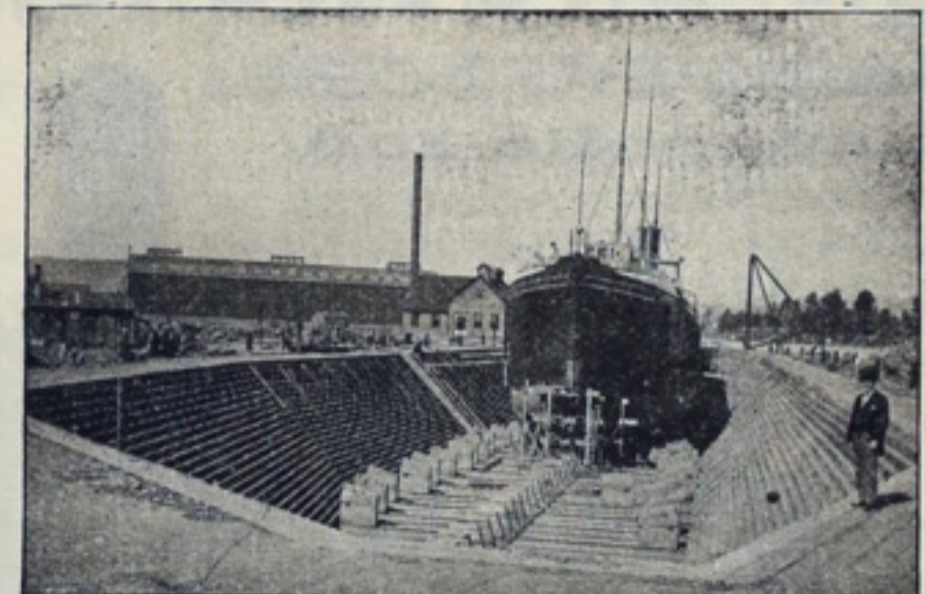
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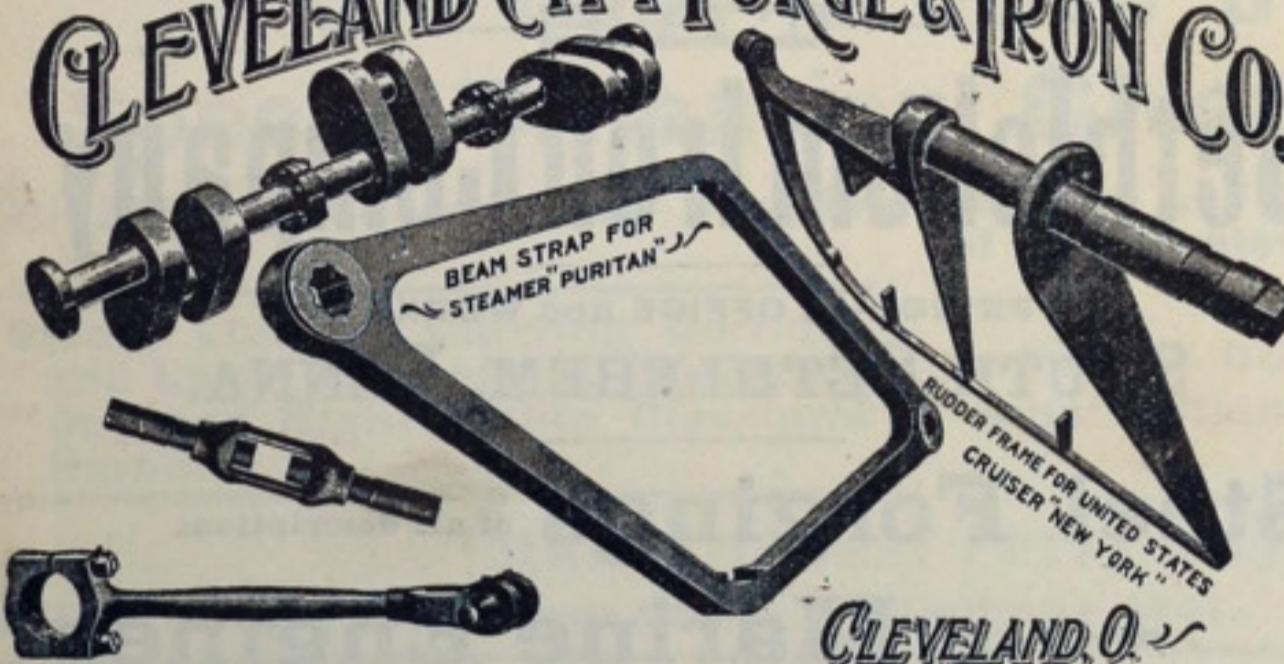
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Breadth, Bottom.....52 "	Depth over Sills.....18 "

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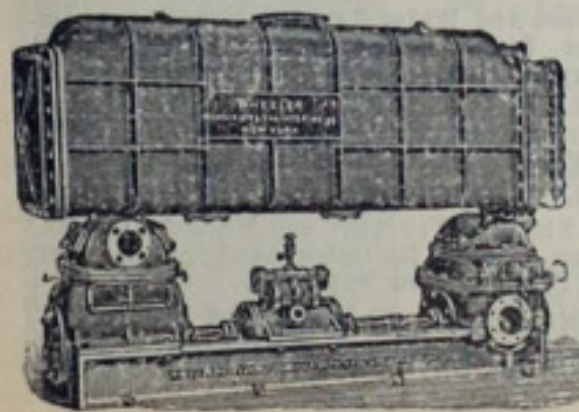
Wheeler Standard Surface Condenser.

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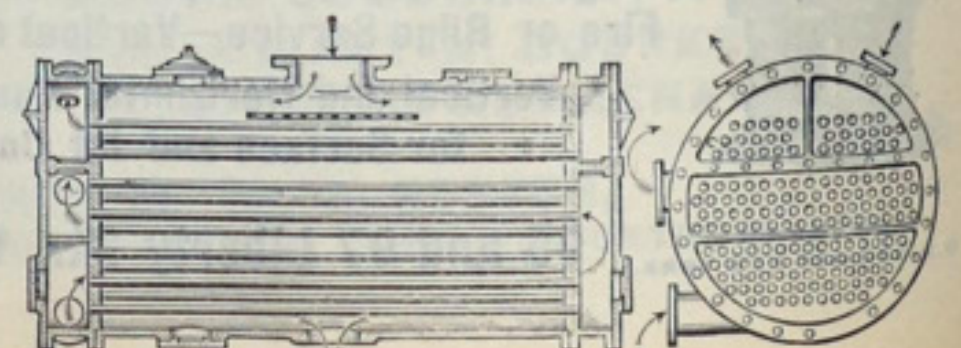
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